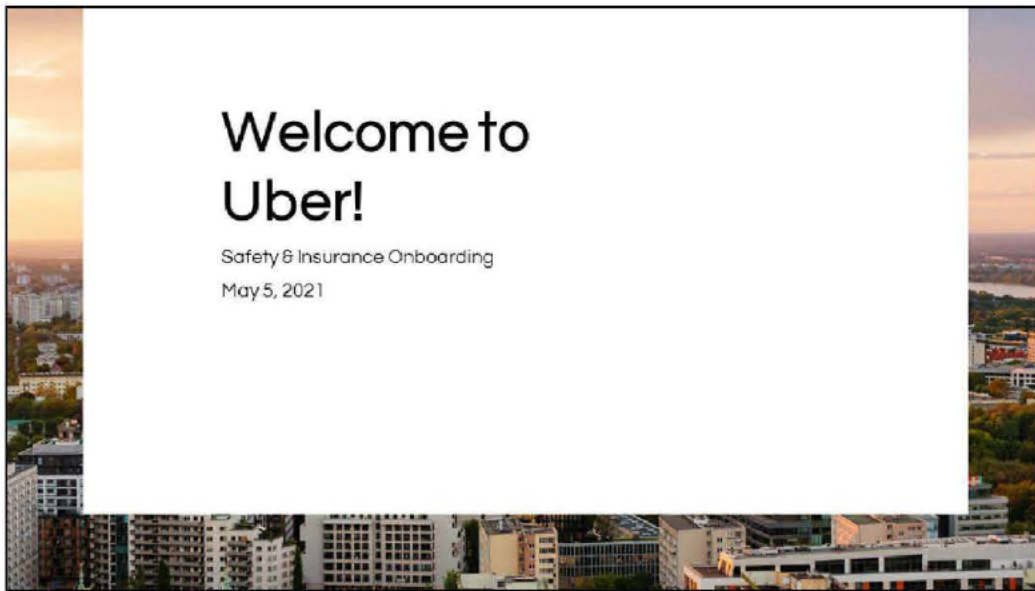


# **Exhibit C**

# **EXHIBIT 3**

**EXHIBIT FILED UNDER SEAL**

**UBER\_JCCP\_MDL\_000475307-UBER\_JCCP\_MDL\_000475485**

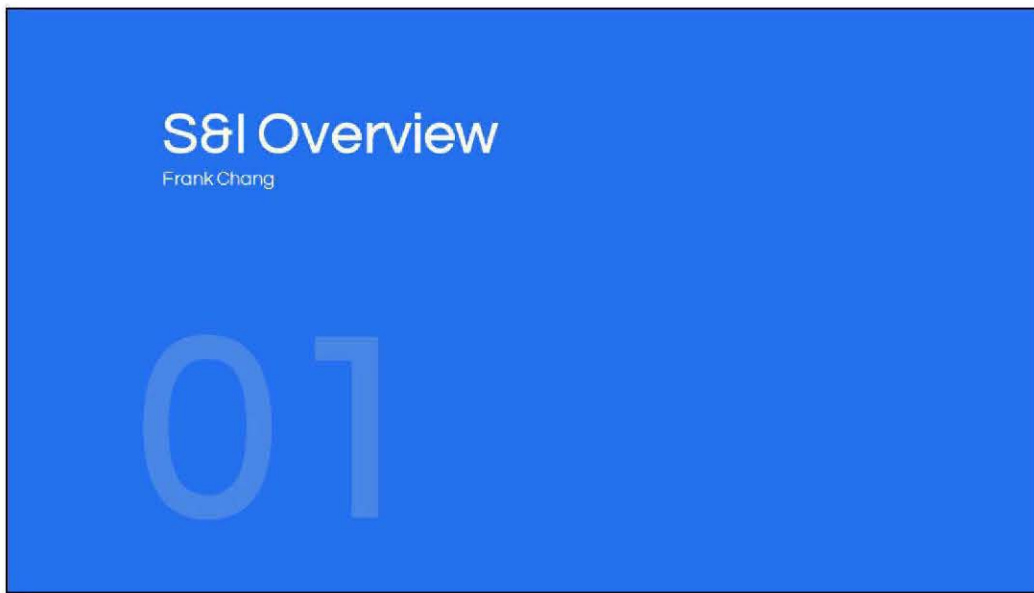




Today's Topics



- [01](#) S&I Overview + Q&A
- [02](#) Global Safety Operations
- [03](#) Privacy & Legal
- [04](#) Incident Taxonomy
- [05](#) Analytics
- [06](#) Data Science
- [07](#) Insurance 101



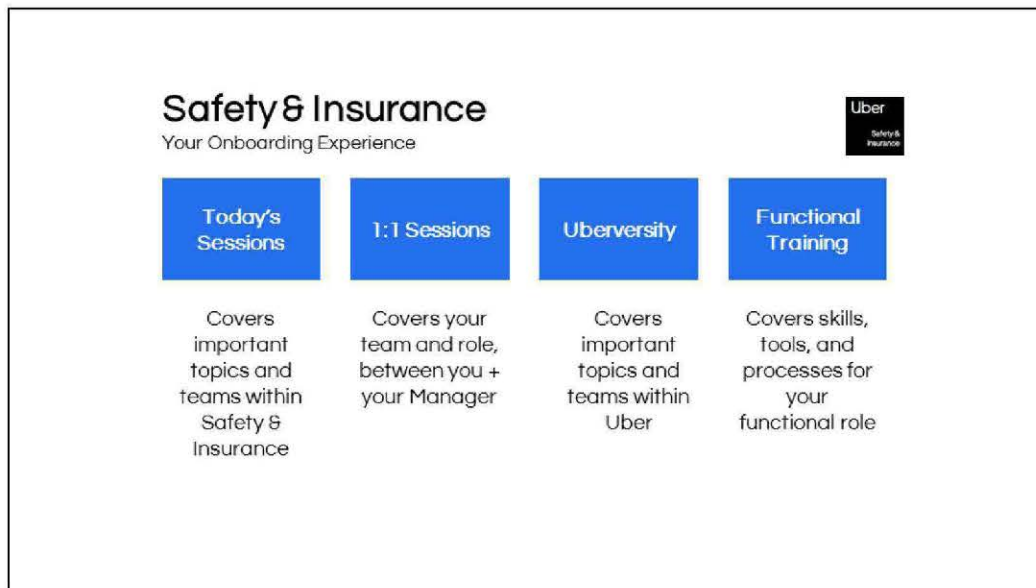
Specific to S&I, which is within the broader Core Services Team.

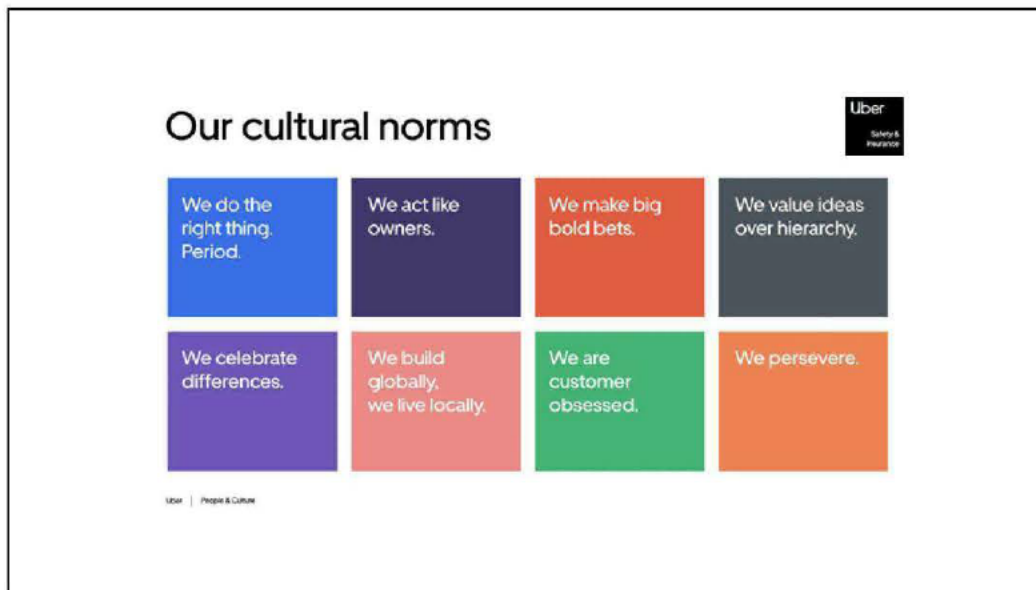
NOTE: welcome to those of you who aren't new to Uber but joined today to learn a bit more about S&I

S&I Overview Topics:



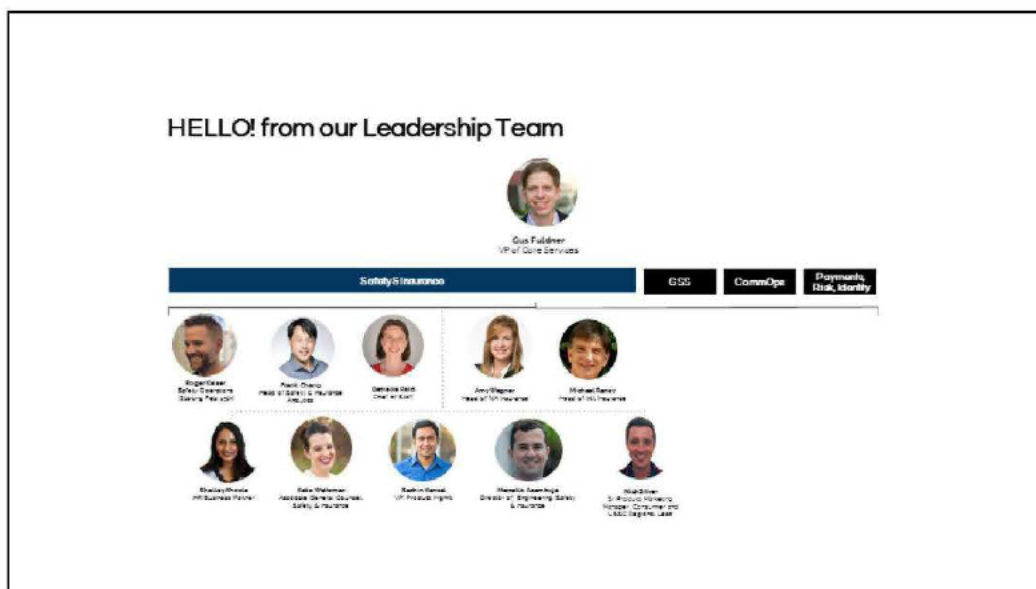
- 01 Onboarding Overview
- 02 S&I Team
- 03 S&I Functional Deep Dives

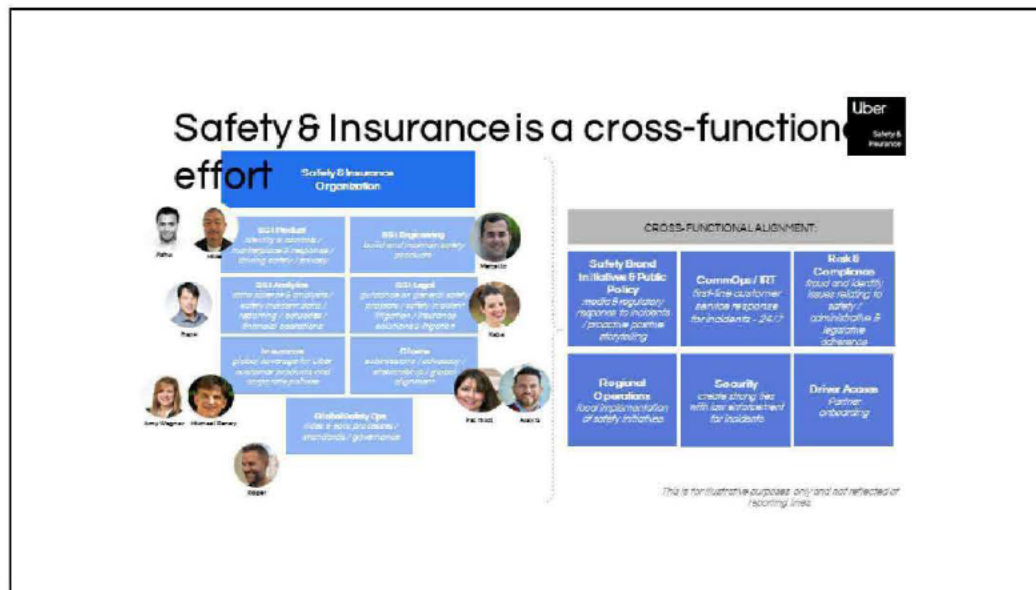






Welcome to Safety &  
Insurance





Brand and Policy - Safety Incidents happen and are often in the media; coordinating a public response. Safety Report

CommOps / IRT - How to respond with empathy when something goes wrong? How to deal with interpersonal conflict - PLUG VIRTUAL HQ COE.



Continuing on for the fourth year as a company priority

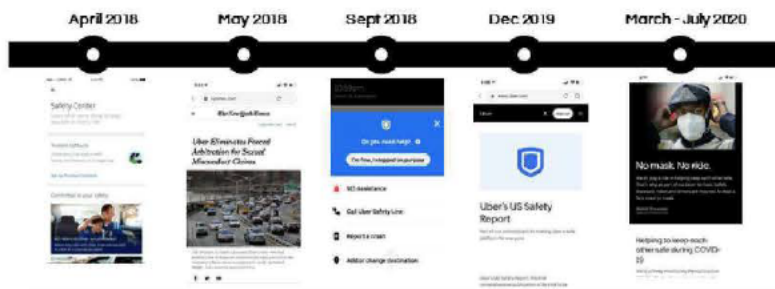


## Stand for Safety

### Mission


Make Uber the **safest** and the **most trusted** transportation choice, and **support** our customers with **empathy** and **care** if things go wrong.

## Safety at Uber: US 2018-2020 Changes




The past two years include major investments in background checks and compliance infrastructure/personnel internally. We've made continued improvements to safety policies and standards as well as in-app safety features. Response & recovery health safety efforts are a new reality with COVID-19.


## 2021 Changes




Continue to lead the new standard for safety in our COVID-19 response




Two Wheeler Safety



Incident reduction



Peace of Mind



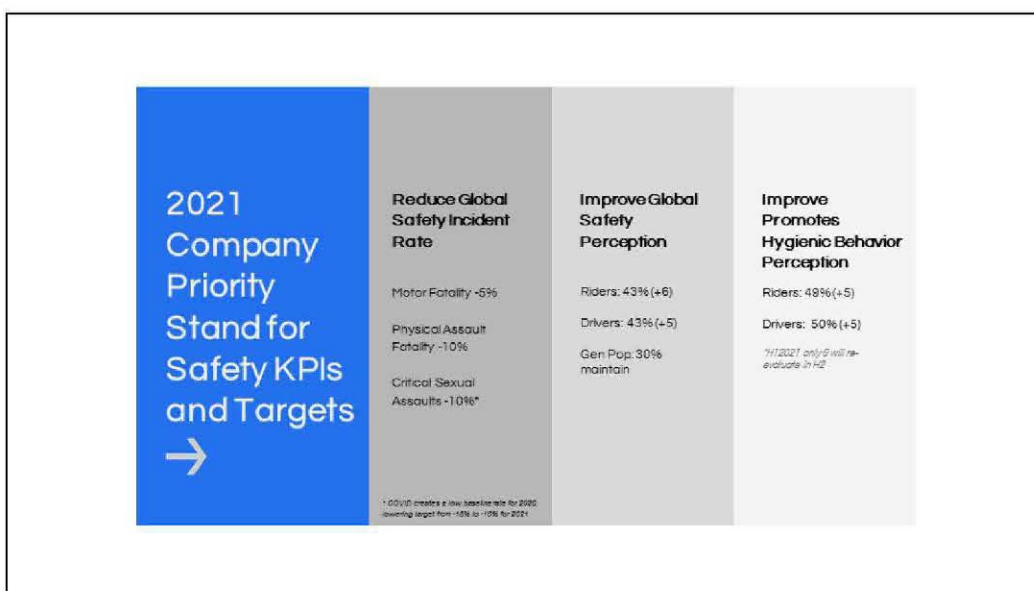
Health Safety

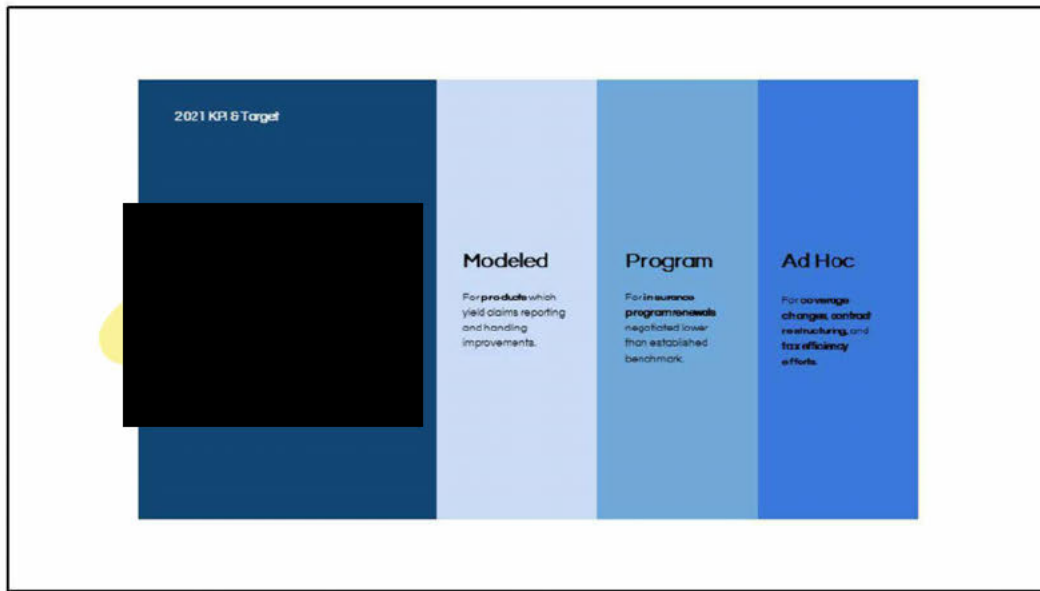
- Sudden changes in the world required us to react and respond quickly
- In addition to reducing existing incidents, monitor and keep our users safe during COVID





KPIs



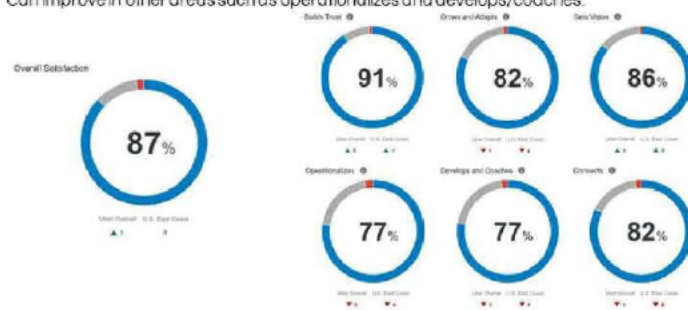






## High-Level Overview

Our Qsat is amongst the highest in Global Mobility.  
 Strengths in building, trust and setting vision.  
 Can improve in other areas such as operationalizes and develops/coaches.



This data only reflects SP direct reporting data.

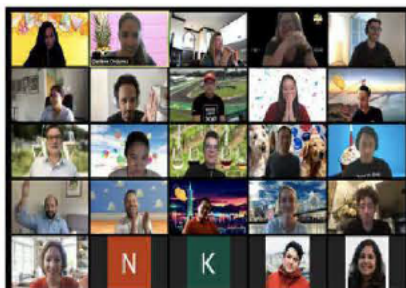
Lowest Scoring Themes		
<p><b>Delegate</b></p> <p>x could <b>delegate more</b> and allow his team to take on more ownership and responsibility even that means small sacrifice or delay on business outcomes (hopefully not).</p> <p>There are always going to be trade offs, but the role of a manager is putting structure and empowering the team to <b>de-prioritize other workstreams</b>.</p> <p>My manager could delegate authority to others more often.</p>	<p><b>Connect</b></p> <p>Work on connecting more across pillars and teams. Very siloed and less connected org chart.</p> <p>Provide opportunities to stay connected for non-business related topics and keep us being the close team that we were when we worked together at the office.</p> <p>My manager could encourage team members to be more actively involved in discussions with leaders from other areas and even facilitate these interactions. It would be a good opportunity for the team to connect with other senior colleagues and make us even prouder of our work.</p>	<p><b>Set Vision</b></p> <p>Give clearer guidance on team's objectives.</p> <p>Set firmer expectations and timelines.</p> <p>Share his vision with the team and how it fits in with the other partner teams in the product and org.</p>
This data only reflects SP related reporting data.		

Highest Scoring Themes		
Builds Trust	Listens	Feedback
<p>(S/he) builds trust and collaboration both within and outside the team. Provides flexibility and support for the team members.</p> <p>Set clear goals and expectations gives the team as much freedom as possible, builds trust, is part of the team.</p> <p>We can speak candidly with him and he is honest and straightforward with his feedback. This builds trust for our immediate team, which is critical since there are sometimes trust issues working cross functionally with other teams.</p> <p>My manager does a great job of creating a safe workplace where I can be my genuine self, listening to my concerns, and trying to assign me projects that excite me.</p> <p><i>This data only reflects 360-degree reporting data.</i></p>	<p>Good at listening and assumes the best intentions. This helps when dealing with difficult situations and challenging relationships.</p> <p>She is very approachable and will stop to listen to any questions or concerns I have even during days where I know her schedule is packed and is likely working late.</p> <p>The kind of person you can call about anything and he will calmly listen and thoughtfully respond- this has made him an especially valuable manager to have during COVID-2020.</p>	<p>Has done a great job of continuing to communicate effectively and thoroughly as we've moved to work from home and has maintained a great feedback loop for us all.</p> <p>My manager listens to feedback and is an advocate for me.</p>

## Events Around S&I



- Quarterly Coffee Chats
- Key Event Coming up:
  - S&I Mental Health & Wellness LIVE Webinar
  - Date:
  - Time:
  - Zoom



21

Slide 21

---

- 2 Update.  
Darlene Ordonez, 4/27/2021
- 1 Yes, please!  
Frank Chang, 4/27/2021
- 1 date and time TBD  
Darlene Ordonez, 4/28/2021

## **S&I Team Overviews**

# S&I Data & Analytics

## S&amp;I Analytics

## Team Overview

## Mission

We provide insights and analytical solutions that are timely, accurate, and actionable to drive safety and deliver insurance.

## Functions

Actuarial  
Data Analytics

Insurance Finance  
Data Science  
Project Management

## Sample Projects

T/I Insurance  
Policy Renewal

G-RAD

Reserve Reviews

Regulatory and  
Privacy Compliance

Audited Safety  
Incidents Data

Litigation Investigation

Product Analytics

Deactivation policies







**S&I Legal**

561 Legal

Team Overview

Mission

Innovate within the legal industry to drive safety measures, insurance solutions and litigation strategies to help support the communities we serve.

Functions

Safety/Legal

Insurance Law

Insurance Litigation

Stats

70

120+

~5,000

~800

# Insurance & Claims

## Insurance &amp; Claims

## Team Overview

## Mission

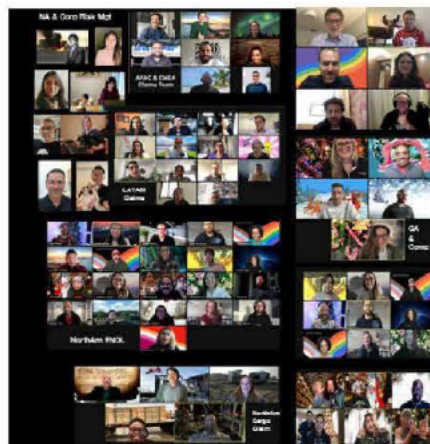
- Provide the right protection and service at the right price while enhancing our business by providing peace of mind and enabling growth.

## Functions

- Insurance Business
- Claims

## Stats

- Support customers across Roles, Delivery, and expansion products
- Scope: Trips & Deliveries, Cyber, D&O, Liability, WC, Property, Freight, other corporate and miscellaneous insurance for Uber
- 60+ team members





**S&I Tech**


561 Tech


## Team Overview


**Mission** Leveraging **tech** to make Uber the **safest** and the **most trusted** transportation and **delivery** choice, and **support** our customers with **empathy** and **care** when things go wrong.

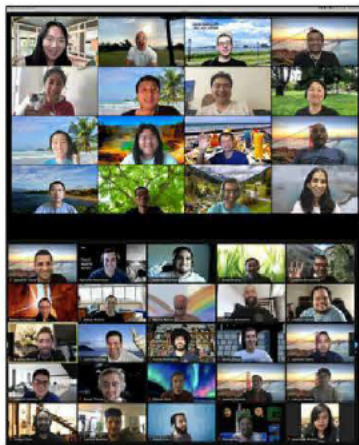
**Functions** Product Management  
Engineering (Mobile, BE, Data, TPM)  
Product Operations

**Stats**

  
3

  
>120

  
139



# S&I Policy & Comms

## SafetyPolicy6 Comms

## Team Overview

<b>Mission</b>	Position Uber as an innovative leader on safety tech and policy with press, consumers, thought leaders, and policy makers.	
<b>Functions</b>	Media relations and strategy Public policy & legal Thought leadership & third party groups	
<b>Stats</b>	5 HQ/USBC 10 International	700+ Media inquiries on COVID in Feb/March 2020  4 Central Safety Policy team  76K Free rides to survivors of Domestic Violence





# S&I Marketing

## 561 Marketing

### Team Overview

**Mission** Set the unrivaled standard for health and safety in ridesharing and food delivery.

**Functions** Product Marketing

**Stats**

<b>26+</b> Health & safety campaigns launched in 2020	<b>61</b> Countries that have launched the Door-to-Door Safety Standard
<b>37</b> Countries with cleaning brand partnerships	<b>16</b> Marketing toolkits shipped globally in 2020 and H1'21



# Global Safety Operations

**Safety Operations**

## Team Overview

**Mission** Lead the industry and set the global standard in delivery and rideshare safety through operational excellence and innovation

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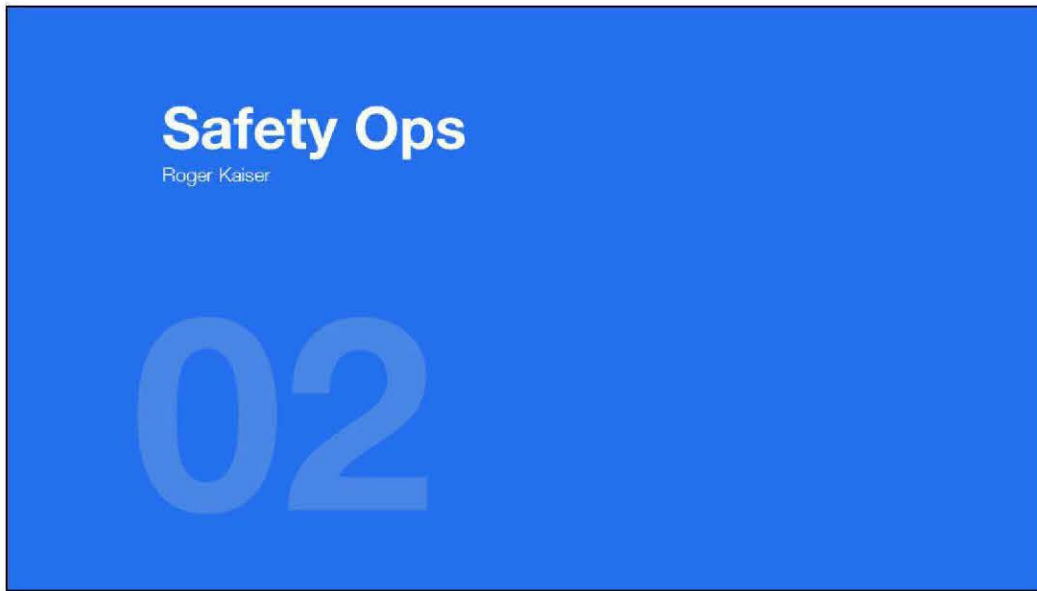
**Teams**

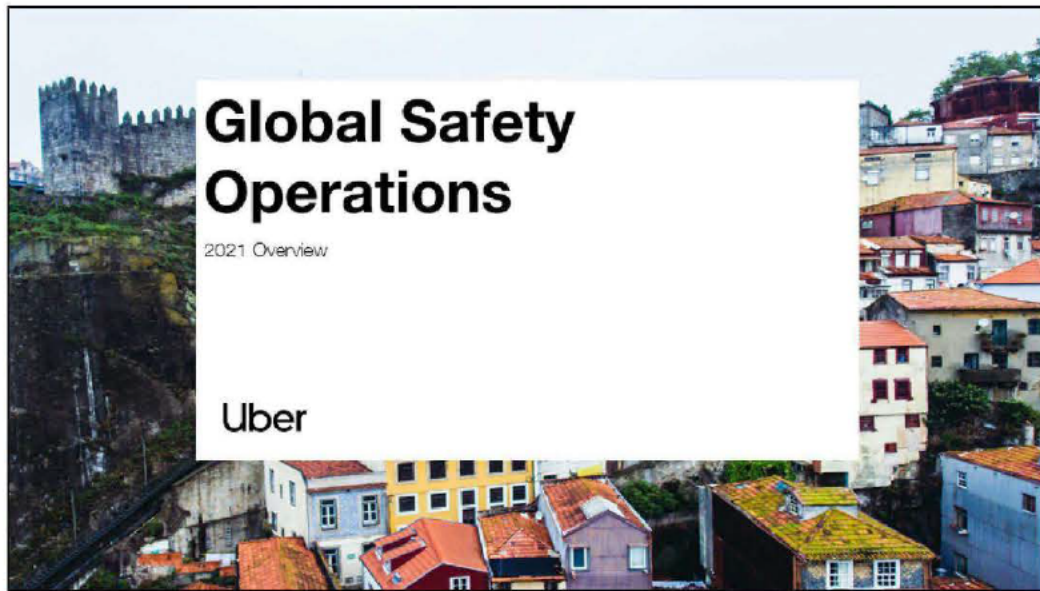
APAC Safety	USBC Safety
EMEA Safety	Central Safety
Latam Safety	

---

**Stats**

35 million Miles distributed	3 million Drivers received free PPE
315k Farmers Received BA/SM education	280k drivers Took USights





**Global Safety Operations was created to unify our safety approach globally and connect HQ and mega-regional efforts**

- Though each mega-region has unique safety issues, there is overlap when it comes to platform access, incident response, and safety standards
- Global Safety Ops facilitates mega-regional collaborations, sets global safety priorities, and implements global safety projects.

**Insight**  
Food couriers on bikes in Toronto are facing serious safety issues  
...  
"Uber is committed to rider safety and we are continuing to build products and make processes about practices that can lead to safer streets for ...  
48 mins ago



**Yahoo Finance UK**  
Uber driver jailed for nine years after raping drunk student on her way home from night out  
He denied rape but was found guilty following a trial at Warwick Crown Court. On Monday 16th seven Salomon, of Coventry, was jailed for nine ...  
7 hours ago

**GBG Chicago**  
Amid Rush Of Carjackings, Rideshare Drivers Call On Uber And Lyft To Help Protect Them  
Drivers are calling on Uber and Lyft to step up their security. "Safety and ride share is often focused on the passenger," Steiner said. "It also ...  
1 hour ago



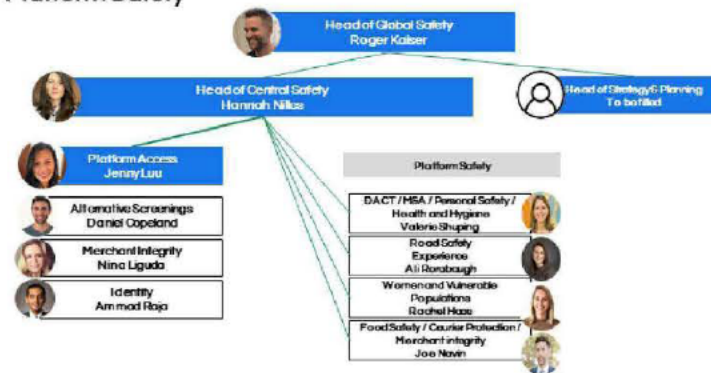
**Business Insider**  
Uber sued for allegedly failing to prevent woman's sexual assault - Business Insider  
CNN reported in April 2017 that more than 100 drivers had been accused of sexual assault or abuse. Shortly after, Uber abandoned forced ...  
Aug 28, 2019







The Central team is organized into Platform Access and Platform Safety



**Mega-regional teams officially joined the team in 2020 and operate alongside HQ Platform Access and Safety**



## Highlighted projects

## 1. Access Compliance

Background Checks  
Documents  
Photos

**uSights are in-house psychometric assessments, helpful where we don't have access to quality BGCs**

- uSights is aimed at evaluating attitudes and behaviors that Uber has determined have an important impact on the safety of the platform
- Recently, Uber hired ETS (a highly reputable and rigorous testing non-profit) to conduct an independent validation of the uSights tool. With a positive report, Uber has the ability to proactively and/or reactively communicate about the tool across all markets where uSights is live or will be launched.



## 2. Trip Experience

---

Driving Safety  
Personal Safety  
Food Safety  
Health Safety

### Global Safety Ops consulted Safety Product on Women Rider Preferred eligibility

- We often work with the product team to determine product eligibility, usage, or other standards
- In this case, we consulted on how product eligibility should be determined, balancing sensitivity around gender identity with potential abuse of the product

2014 Conversation

I've updated my gender identity.

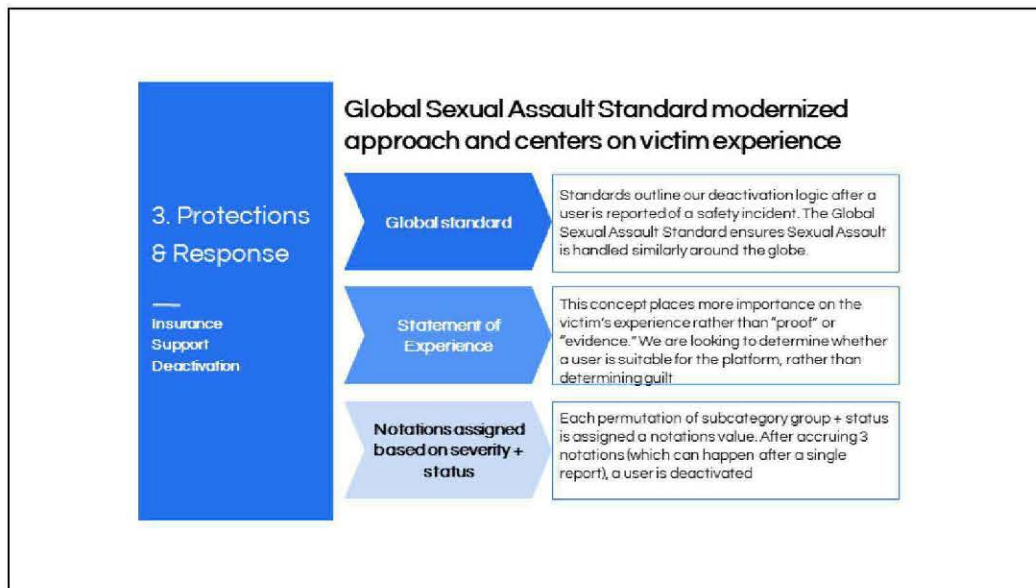
U: Thank you for updating your gender identity. We'll take note of your gender update and may update you to use the Women Rider Preferred badge. To learn more about this feature, visit [this link](#).

Please verify this message if you are not changing the Gender Declaration form in order to get access to the feature.

[I understand and continue](#)

Done · 10/26/2014 1:01 PM

Reply




#### 4. Safety Commitment


---

Safety Sentiment  
Education  
Community


### Uber partnered with RAINN to create a dedicated hotline for sexual assault survivors



Trust & Safety investigators refer eligible users to **dedicated hotline** managed by RAINN support specialists



RAINN provides users with free, confidential crisis support and help navigating options related to short- and long-term support (e.g. therapy, service providers, reporting to law enforcement)



Access to immediate financial support for resources such as trauma-informed therapy

## 2021 Priorities



## The Role of Safety Operations

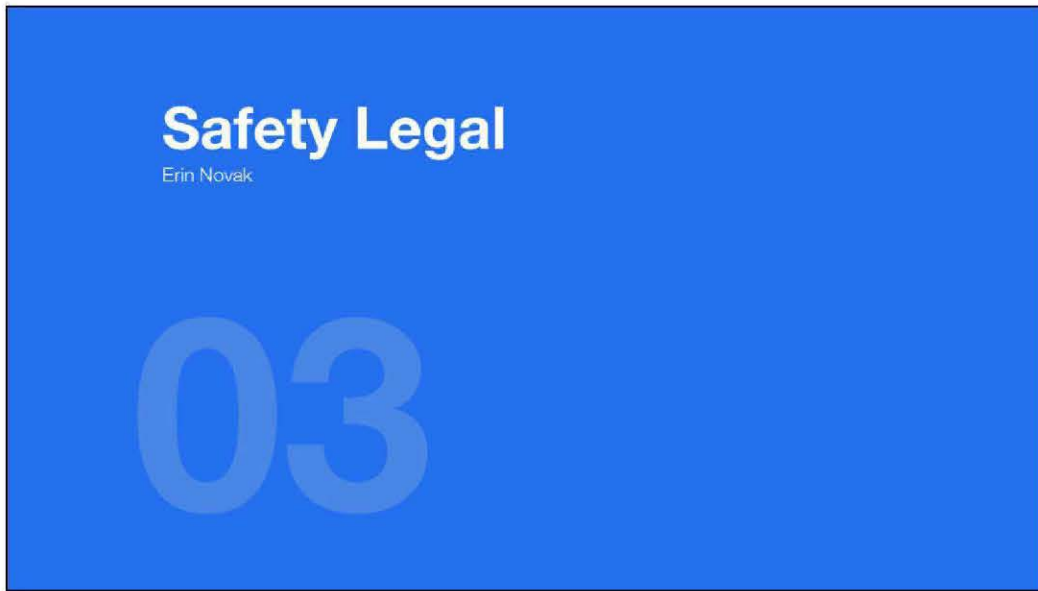
Platform Access Pillar	Platform Safety Pillar
Ensure we know and properly vet our users before accessing the platform and periodically throughout their journey as a user	Continually improving the safety of all users of each step of their journey or delivery, ensuring good actors stay on the platform and removing bad actors
User Identity	Food Safety
User Screenings	Personal Safety (esp. Vulnerable Populations)
Merchant integrity	Health & Hygiene
Risk ops // Marketplace Fraud*	Road Safety
Deactivation criteria	
Safety perception and experience: Serve our customers    Improve awareness    Increase clarity	
Insights and Analytics: Ownership of core safety metrics    Trend and root cause analysis	
Governance: Risk management    Forums    Policy and Standards implementation    Leadership and Culture	
Enable the business: Enable new products    Maintain critical SLAs    Cost management	

\*Focus to protect

49

### Global priorities for 2021 H1 focus on risky trips and the safety experience







**REDACTED - PRIVILEGED**

ATTORNEY CLIENT PRIVILEGED & CONFIDENTIAL

**REDACTED - PRIVILEGED**

ATTORNEY-CLIENT PRIVILEGED & CONFIDENTIAL

**REDACTED - PRIVILEGED**

ATTORNEY-CLIENT PRIVILEGED & CONFIDENTIAL

**REDACTED - PRIVILEGED**

ATTORNEY CLIENT PRIVILEGED & CONFIDENTIAL

**REDACTED - PRIVILEGED**



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ATTORNEY CLIENT PRIVILEGED & CONFIDENTIAL

**REDACTED - PRIVILEGED**



**REDACTED - PRIVILEGED**

ATTORNEY-CLIENT PRIVILEGED & CONFIDENTIAL

# Incident Taxonomy

Ashutosh Karandikar

04

Agenda

- 01** Incident Analytics Team
- 02** Life of a Safety Incident @Uber
- 03** Getting Involved

Incident Analytics Team

## Meet the Team



## **Our Mission**

*"A trusted resource to enrich, monitor, investigate, advise, and report safety incident data to empower partner teams to take smart, targeted actions which reduce safety incidents"*

If you discover any inconsistencies in your safety data, please reach out to us at [safety-insurance-incident-analytics@uber.com](mailto:safety-insurance-incident-analytics@uber.com).

## Life of a Safety Incident @Uber

## A Safety Incident Occurs



- ~20 million\* Uber trips+deliveries per day around the world
- A rare Safety Incident can happen anytime



\*subject to change

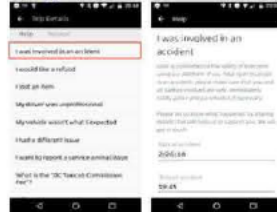


## Bliss Ticket Created



**What is Bliss?** Bliss is an Uber internal tool for support agents to manage and respond to reports from users (not just safety incidents) [\[Example\]](#)

### In App:



### In Bliss Tool:

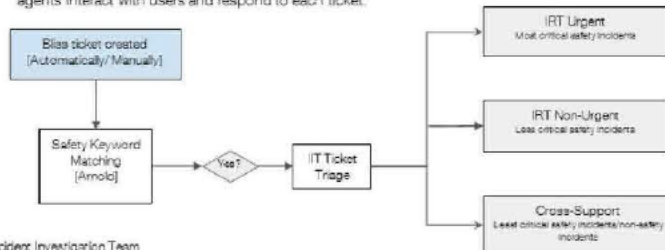


- User submits report through the app → Bliss ticket generated.
- Uber support agents triage and respond to Bliss tickets

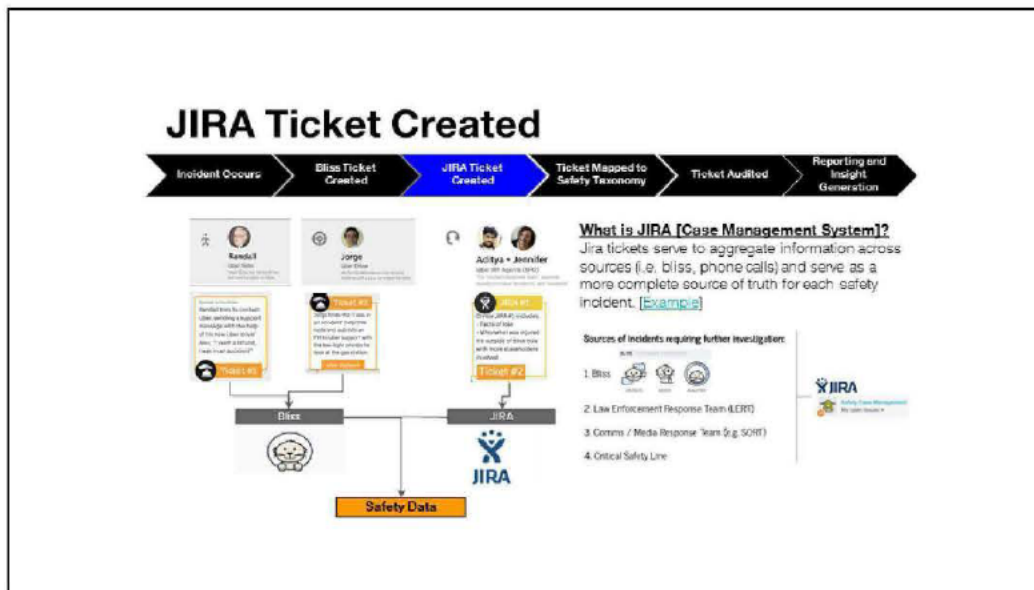
## Bliss Ticket Routing Flow



Bliss ticket routed to Uber support agents by triage team; support agents interact with users and respond to each ticket.



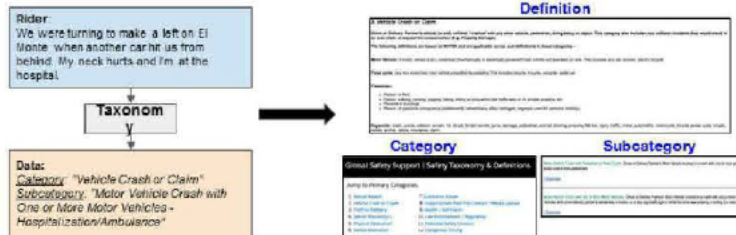
IT: Incident Investigation Team  
IRT: Incident Response Team



## Tickets Mapped to Safety Taxonomy



**What is Safety Taxonomy?** Safety Taxonomy is a **standardized** and **consistent** way to categorize and define safety incident on Uber platform and provide a **structured data** to unstructured information to **measure, track and take action**

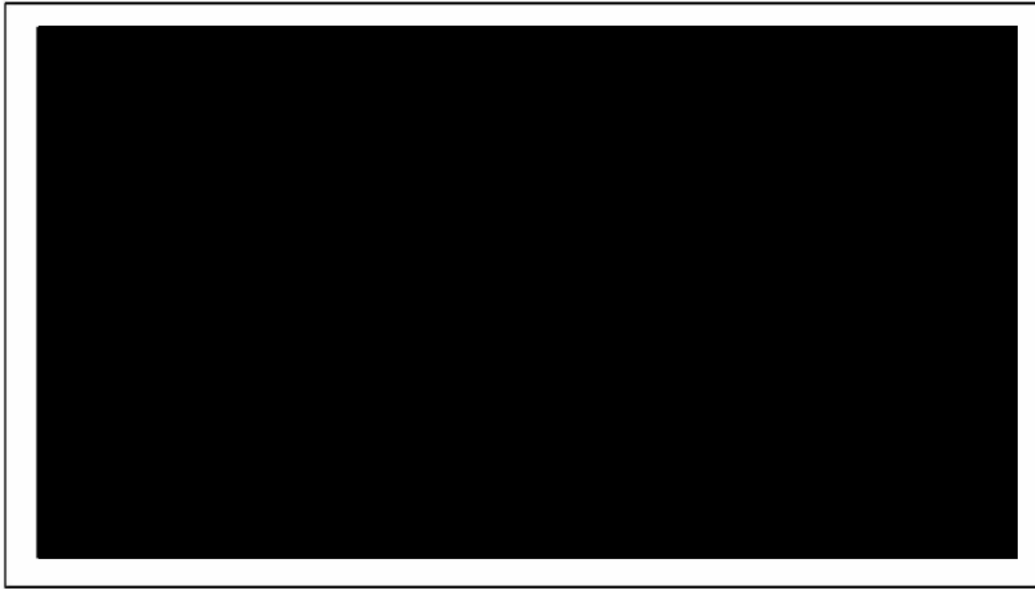


## Need of Safety Taxonomy



### Why is Safety Taxonomy Important?

Standardized Incident Interpretation	Measure And Track	Analytics	Take Actions
<ul style="list-style-type: none"> <li>Provides a consistent way to understand safety incidents</li> <li>Creates a common ground for interpretations and actions</li> </ul>	<ul style="list-style-type: none"> <li>Enables KPIs and goals setup for safety</li> <li>Understanding of patterns and behaviours based on standardized information</li> </ul>	<ul style="list-style-type: none"> <li>Decision making and strategies are based on standardized and structured information</li> <li>Relatively easier to understand gaps and risks</li> </ul>	<ul style="list-style-type: none"> <li><b>Policies</b> - Safety policies (DACT, SAVSM Deactivation) based on taxonomy</li> <li><b>Products</b> - Strategic decision-making</li> </ul>

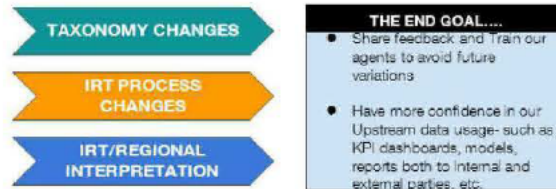


## Tickets Audited



**What is Ticket Auditing?** Safety ticket auditing is a process to audit safety tickets to confirm accuracy of information (i.e. taxonomy category/subcategory, reporter, reported against, invalid etc..)

**Measuring Safety!! (#safetyfirst) (Quality data → Accurate Insights → Better Products/Deliverables)**



## Reporting And Insight Generation



Reporting	<ul style="list-style-type: none"> <li>- What safety looks like at Uber</li> <li>- How to interpret incident metrics</li> </ul>	<ul style="list-style-type: none"> <li>- Safety Report (Uber's safety report is an example for all to follow) - fig)</li> <li>- Ongoing 30+ legal reporting</li> <li>- External Reporting</li> </ul>
Data → Insights	<ul style="list-style-type: none"> <li>- Guide product strategy</li> <li>- Understand regional behaviours and risks</li> <li>- Understand movement in incident metrics</li> </ul>	<ul style="list-style-type: none"> <li>- Safety KPIs: Monthly Reporting of Trends and Insights</li> </ul>
Improvements	<ul style="list-style-type: none"> <li>- Continuous efforts to improve data accuracy</li> </ul>	<ul style="list-style-type: none"> <li>- Safety data education</li> <li>- Technology improvements</li> <li>- Incident handling policy improvements</li> </ul>



## [Example] Safety Report



**The Washington Post**  
 Uber discloses 3,000 reports of sexual assault on U.S. rides last year in its long-awaited safety study



What went into this report? Detailed statistics of Uber safety incidents... calculated on top of **cleaned, audited** safety data.

**US Safety Report**

[Report Link Here](#)

## Getting Involved

### Taxonomy-related code review

- Please [include RIA team](#) in code review for taxonomy-related queries with "medium" impact or greater (use judgment, err on side of asking for review)

### Incident Analytics office hours

- Bi-weekly IA office hours for answering questions on taxonomy & other safety items
- [Zoom link](#) (On Wednesday every two weeks, reach out to [RIA team](#) if you need an invite)

### Taxonomy change announcements

- Taxonomy changes impacting safety data will be emailed to you as they occur

### Review tickets

- Highly suggest reviewing tickets before analyses to build familiarity w/ specific incident types. Can aid & unlock analyses

### Resources

- Tools ([Get RIA Access](#), [JIRA](#))
- Taxonomy ([Rides](#), [EATs](#), [Invalid Definition](#))
- Incident Rate Methodology ([Rides](#), [EATs](#))



## Who We Are



**Sunny Wong**  
Manager, Data Science



**Jianlin Wang**  
Business Intelligence Analyst



**Alessandro Araujo**  
Data Analyst



**Verun Harchekar**  
Manager, Data Analytics



**Jheel Doshi**  
Business Intelligence Analyst



**Kewei Chen**  
Data Analyst

## Product Analytics & Incident Reporting

### Broad Scope

Product Metric  
Development  
& Deep Dives

SQL & Peer  
Review

Pipeline  
Design

Visual Design

### Example Projects

[\[P0 Doc\]](#)

#### COVID Product Analyses

- Earmers Checklist
- No-Mask Feedback
- PPE Distribution
- Inventory Management

#### Personal Safety Analyses

- SDMy3
- Ultrasound
- Verify My Ride
- Rider Funnel
- uSights Support
- Mutombo

#### Driving Safety Analyses

- Ride Check
- Dash cams
- Claims Operational
- Road Safety
- Driver Hour Limit
- Insurance
- Two wheeler safety
- Dangerous Driving Notifications

#### Safety Incidents

- Safety KPIs
- Incident Details
- DACT Effectiveness



## Example: Safety Incident Reporting

### Safety KPI Dashboard

Dashboard shows Incident Rates for Critical Auto Crash & Critical Interpersonal Conflicts broken out by audited regions and geo. Includes 2020 geo's. **Audited Data ONLY.**

#### Top KPIs

1. Critical Motor Fatalities
2. Critical Physical Assault Fatalities
3. Critical Sexual Assault

### Incident Detail

Self-Service Dashboard allows for users to deep dive into incident subcategories, Cities, as well as cash/non-cash type. Includes Audited and UnAudited data.

#### E.g of Metrics

1. Incident Rate By Geography
2. Incident Rate By Category
3. Incident Rate for Cash vs. No Cash Trips

### DACT

Self-Service Dashboard allows for users to deep dive into deactivation rates for riders and drivers.

#### E.g of Metrics

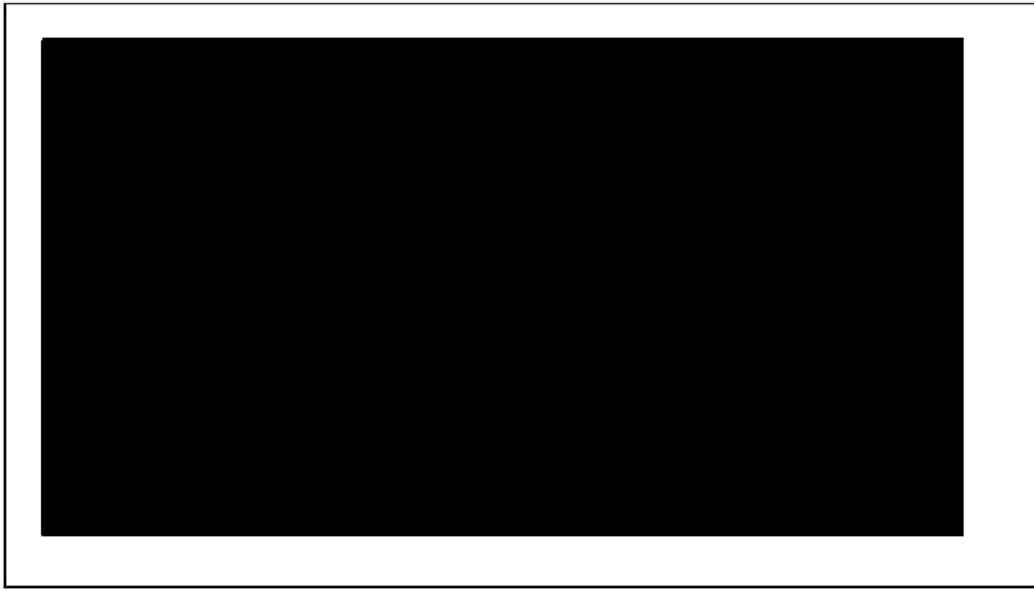
1. Deactivation R.
2. Dact Flagging Rate
3. Token Count by Region

## Permissions

- Our team also enables Tableau permissioning to different groups within S&I.
- For the internal groups within S&I, make sure you're added to a group from the **left**.
- For our partners from other teams, permission can be granted by the specific dash from the **right**.







## Useful Links

- S&I Onboarding Doc: [Link](#)
- S&I Secure Hive Onboarding Doc: [Link](#)
- Summary Dash: [Link](#)
- Hive Sync
- Post
- Sourcegraph
- Tableau Onboarding: [Link](#)
- Beeline: [Link](#)
- Slack @heel to be added to slack channel for different products such as #querybuilder, #tableau-user



## Team



**Abbas Hooshmand**  
Sr Data Scientist



**Gorkem Ozkaya**  
Sr Data Scientist II



**Jing Zan**  
Sr Data Scientist



**Louis Remyus**  
Data Scientist II



**Patrick Muh**  
Manager II



**Robert Kyle**  
Sr Data Scientist

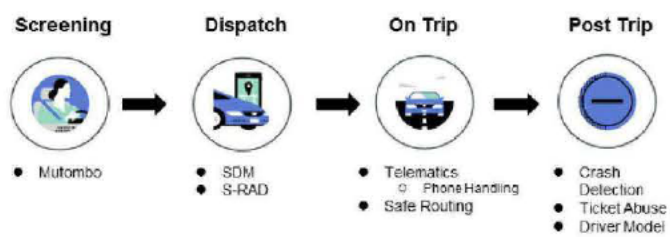


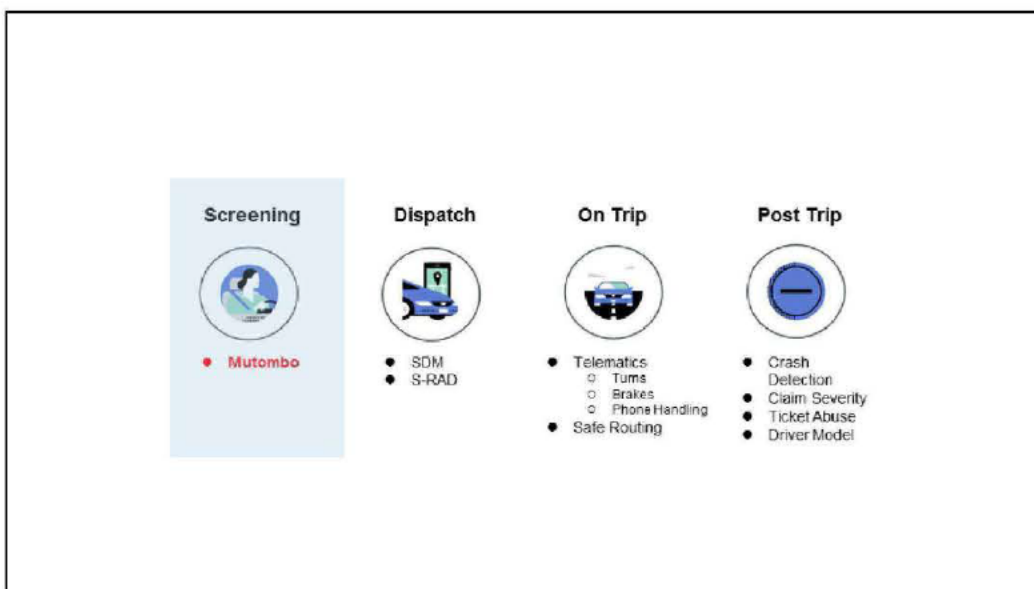
**Wayne Zhang**  
Staff Data Scientist,  
TJJA

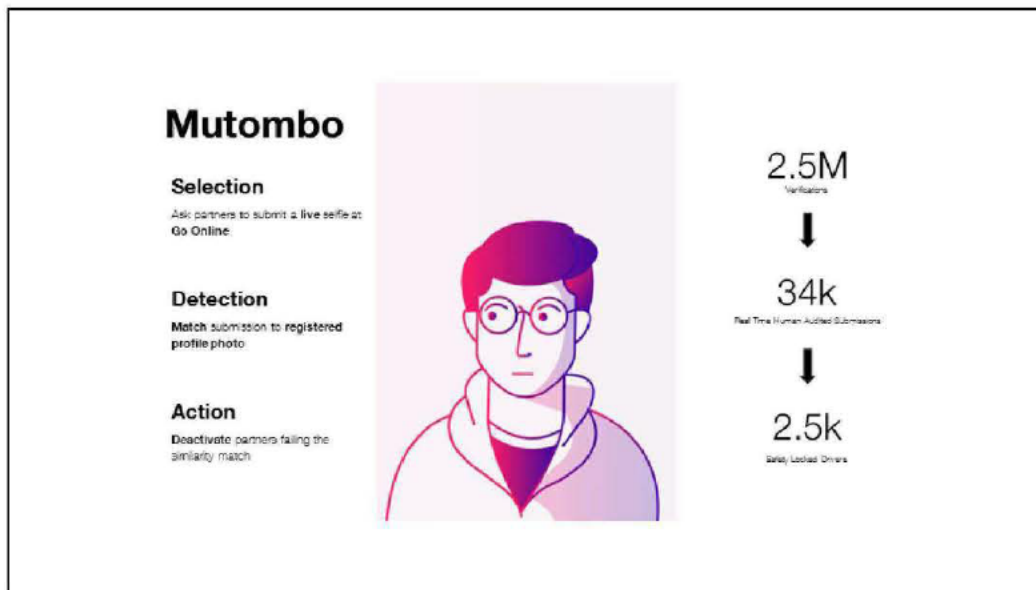


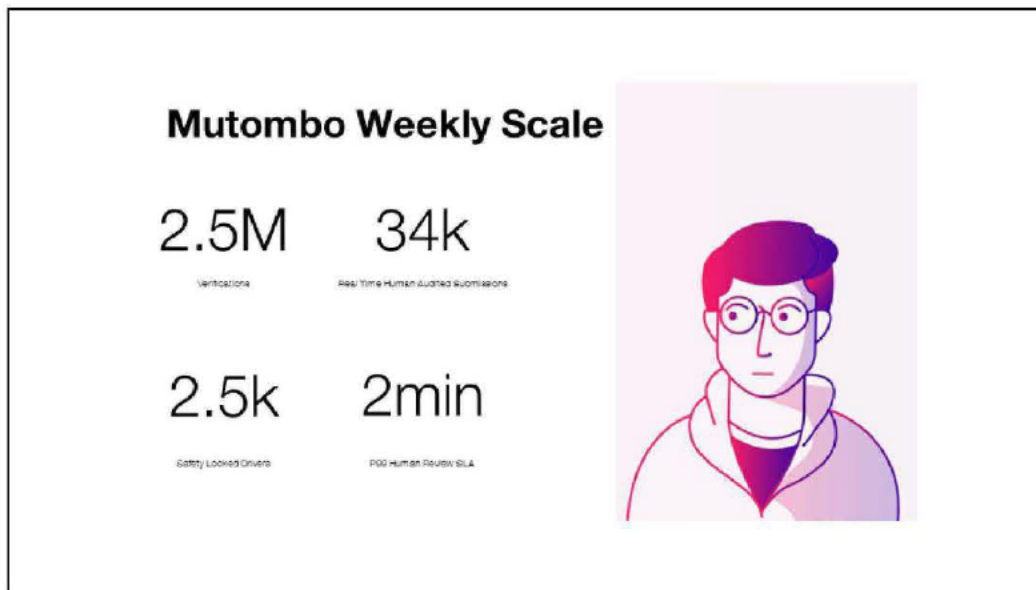
**Dennis Lu**  
Data Scientist II

## Projects

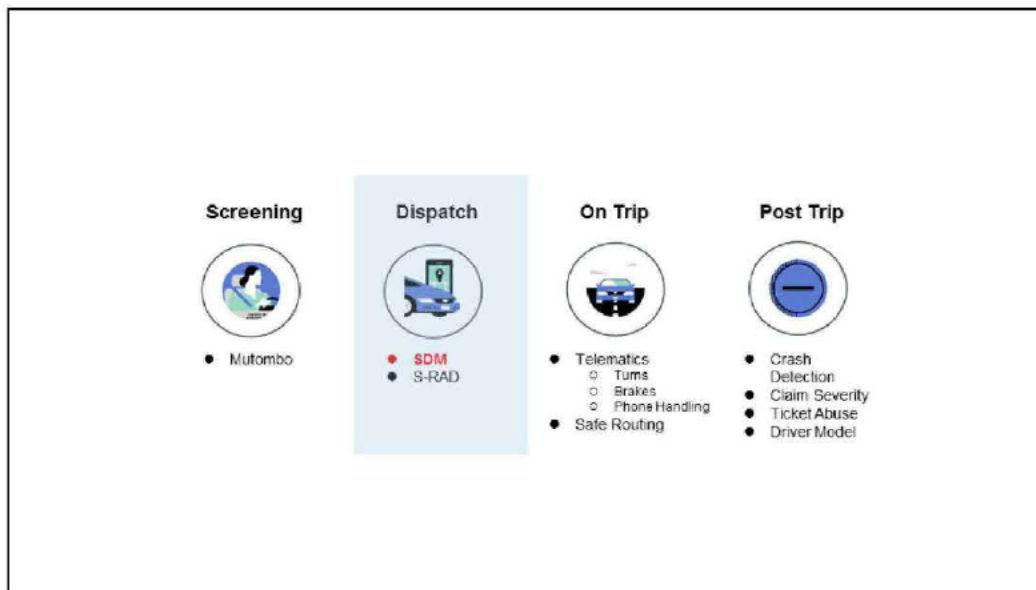












## Safe Dispatch

### Motivating question:

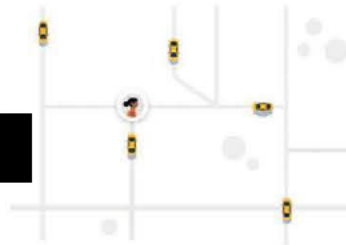
- How can we realize the human and economic benefits of cash while simultaneously raising the bar on safety?

### Safe Dispatch Model (SDM):

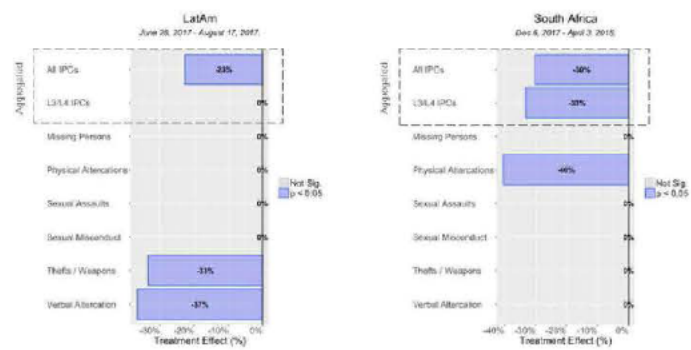
- Leverage machine learning to detect and block potentially malicious cash trip requests in real-time
- **LatAm**
- **South Africa**

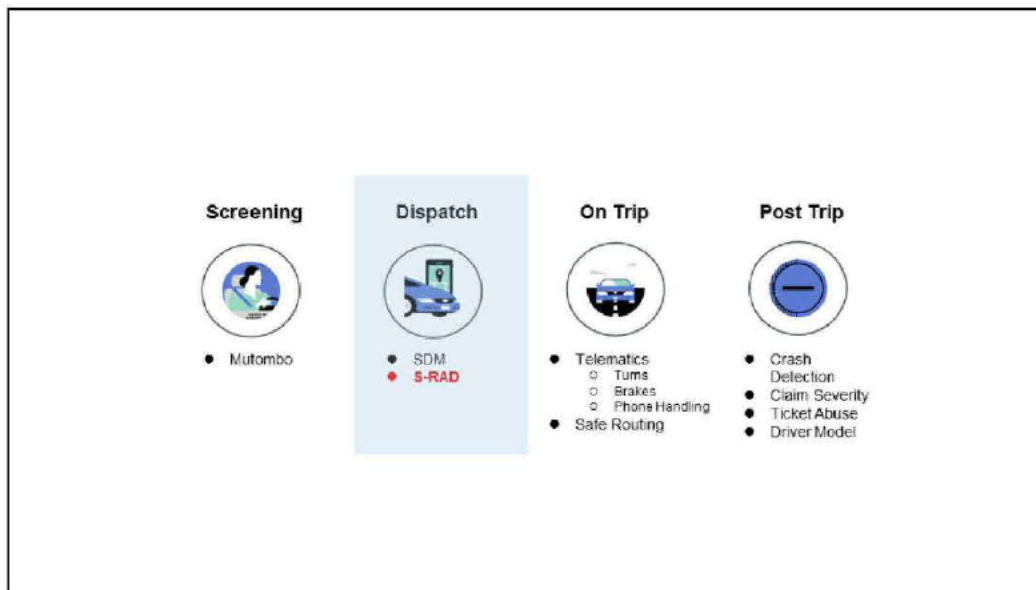
### Safety Risk Assessed Dispatch (SRAD):

- Identify driver-rider matches with elevated risk using machine learning
  - User data (feedback, account info, gender)
  - Request attributes (time, location, product)
- **Down-rank** matches with elevated risk at point of dispatch



## Reduction in Interpersonal Conflicts

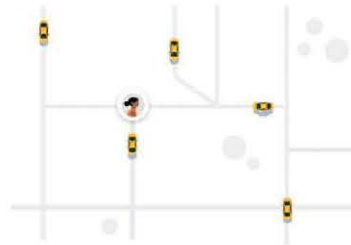




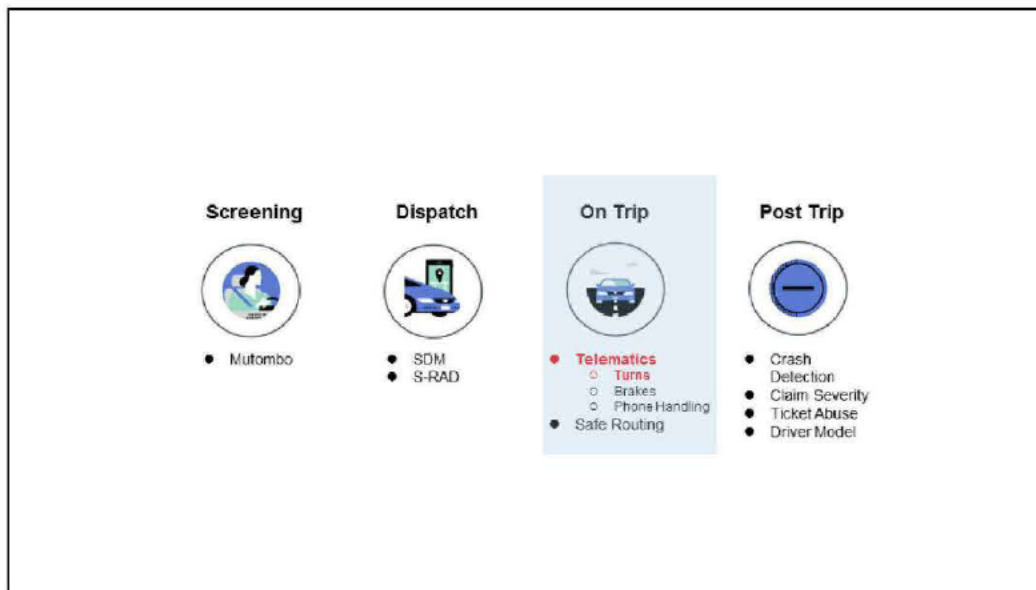
## Safety Risk Assessed Dispatch (S-RAD)

Prevent sexual assaults by:

1. Identifying **driver-rider matches with elevated risk** using machine learning
  - a. User data (feedback, account info, gender)
  - b. Request attributes (time, location, product)
2. **Down-rank** matches with elevated risk at point of dispatch



Attorney-Client Privileged



**Which one is more dangerous?**



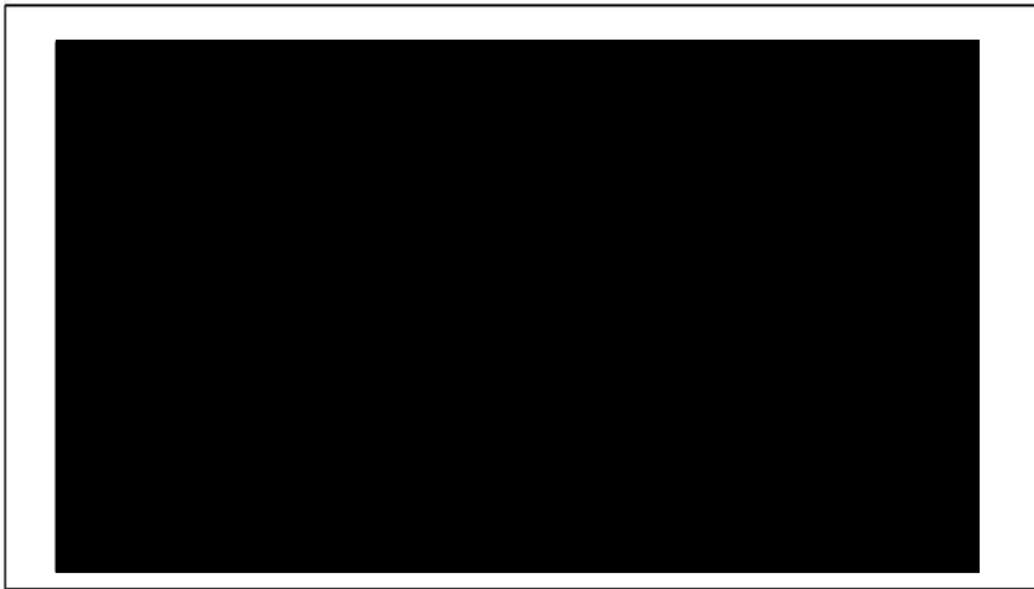
VS.



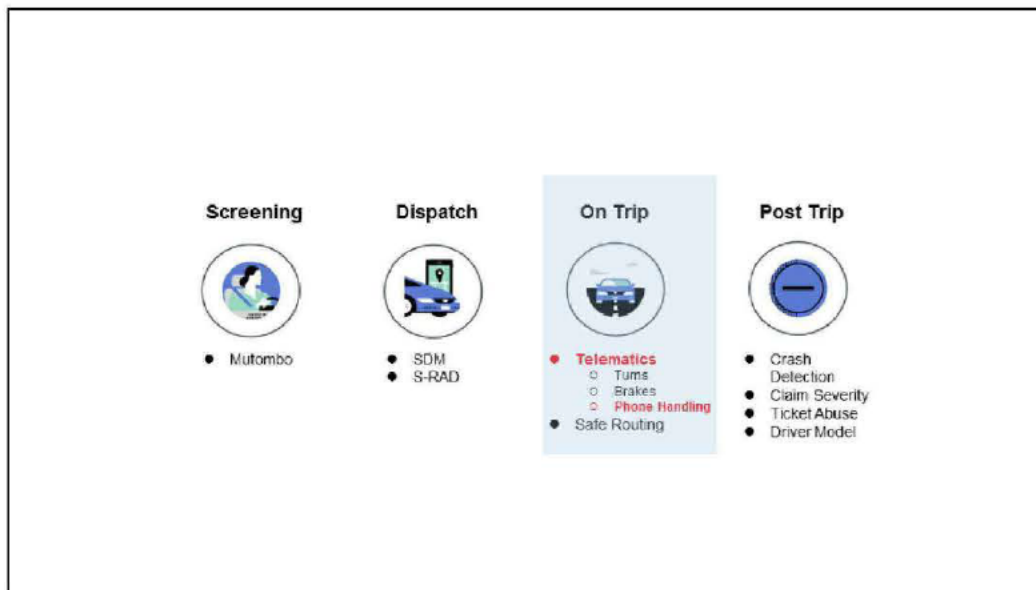
Low exposure X High probability of damage



High exposure X Low probability of damage









## Boulder Data Collection

30+ phone devices



15+ phone mounts

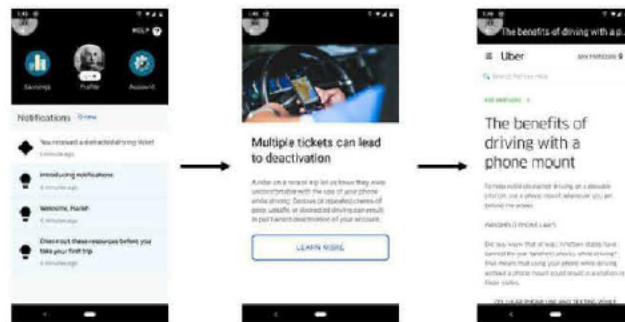


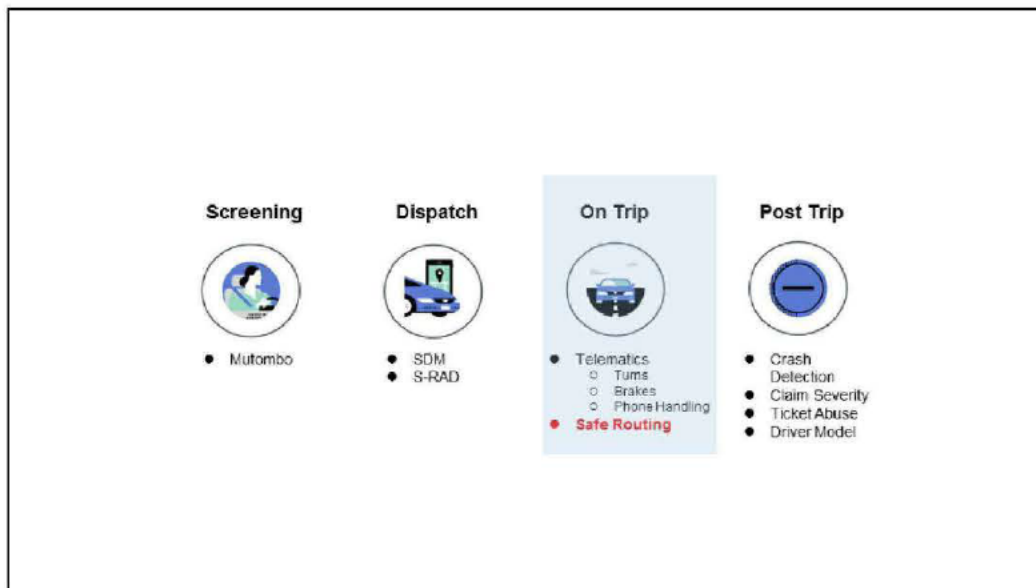
15+ unmount events



## Design

Launched on 6/14/2019





## Safe Routing

### Available data

- Historic driving maneuvers suggested by Uber navigation
- Historic expected traffic conditions and speed
- Road features on route
- Safety outcomes

### Goals

- Estimate safety penalties to be used in route finding
- Allow drivers to choose routes based on safety

Distribution of maneuvers in suggested Turn-By-Turn instructions during dropoff leg of US P2P trips 2013-08-14



## Safe Routing

### What makes a route risky?

- Difficult maneuvers
- Busy roads
- Driving speed

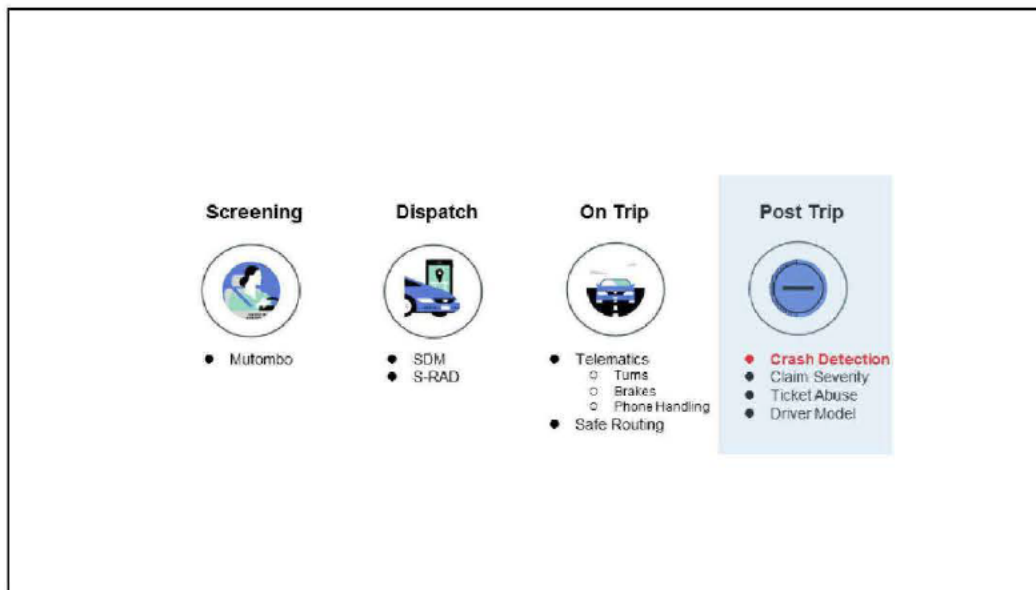
### Applications

- Recommend safer routes to drivers
- Ensure insurance pricing reflects safety of routes
- Allow drivers and riders to make decisions based on safety



3 features are enough to reveal an [REDACTED] in per mile collision risk:

1. Expected trip distance
2. Expected trip duration
3. US State





## Crash Detection

Quickly detect potential crashes using ML & **proactively** support with empathy and care

- Fast response
- Fast driver reactivation
- Improve customer satisfaction
- Improve reputation for safety
- Insurance savings

Rider



Driver



## Public Announcement on Sep 5, 2018



TECH INDUSTRY  
Uber rolls out safety features, like AI  
that can detect crashes



SAFETY FIRST Uber is turning your  
smartphone into an automatic CRASH  
detector

The new technology could save lives, and will roll out to the  
coming months



tech BUSINESS CULTURE GADGETS

Uber will soon detect  
crashes

THE VERGE

TECH

SCIENCE

WORK

TECH TRANSPORTATION UBER

Uber is going to turn your smartphone  
into an automatic crash detector

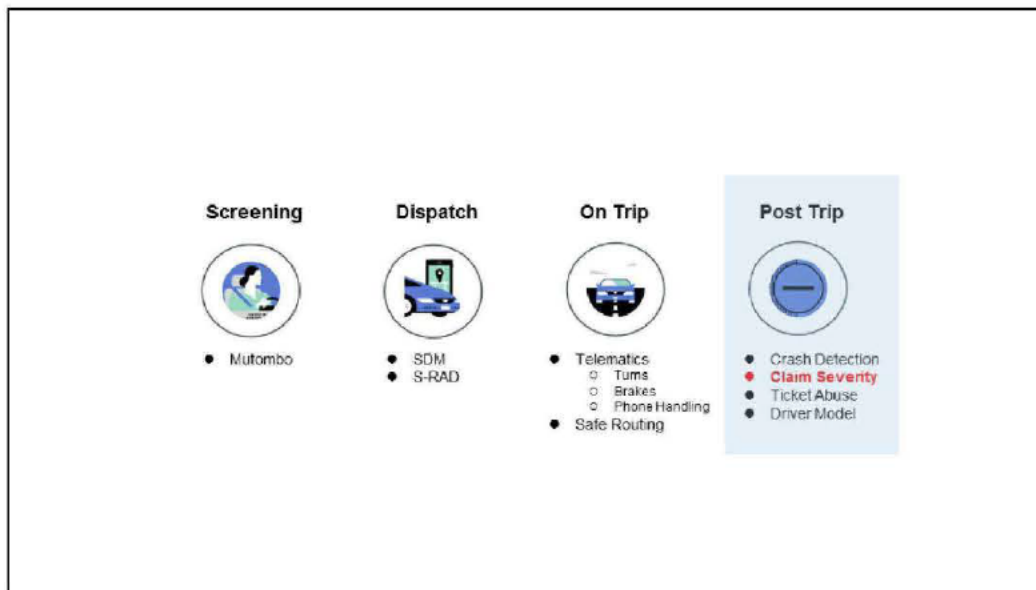
'Ride Check' will send notifications to riders in the event of an  
accident or an unusually long stop

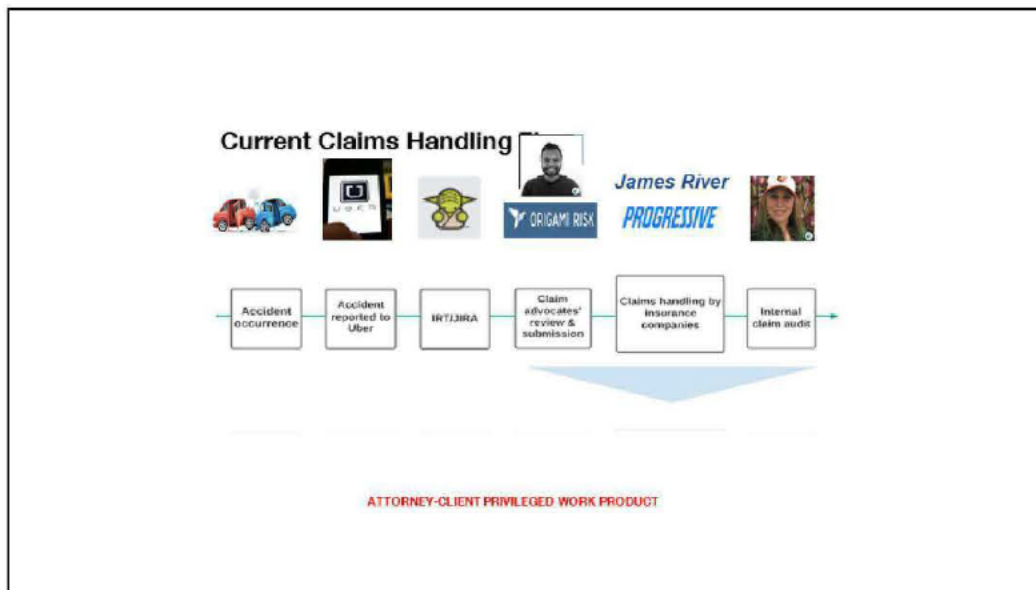
STAR

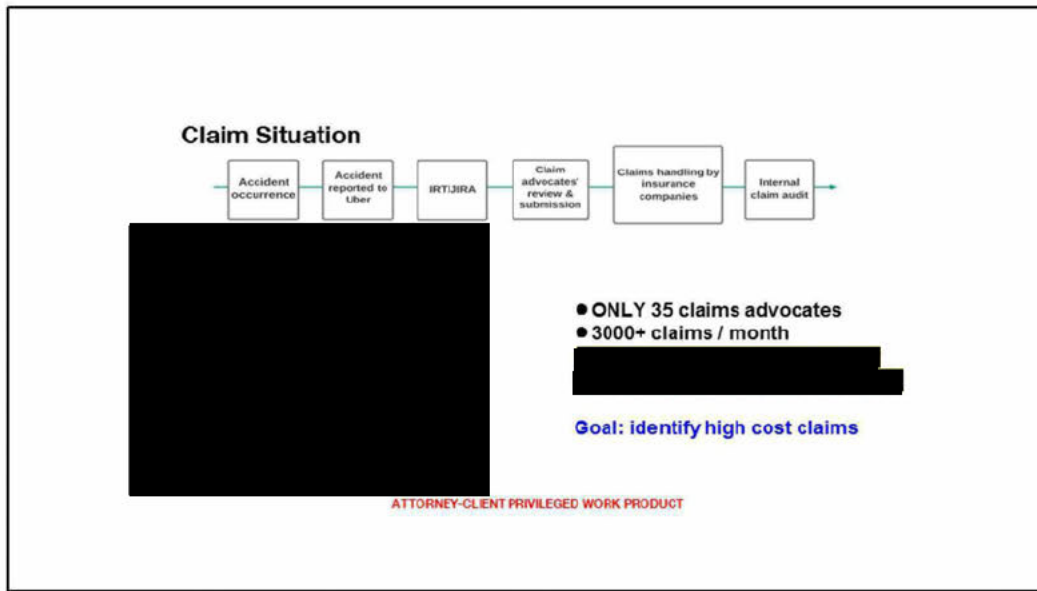
September 22, 2018

Uber's new app turns smartphone into an  
automatic crash detector

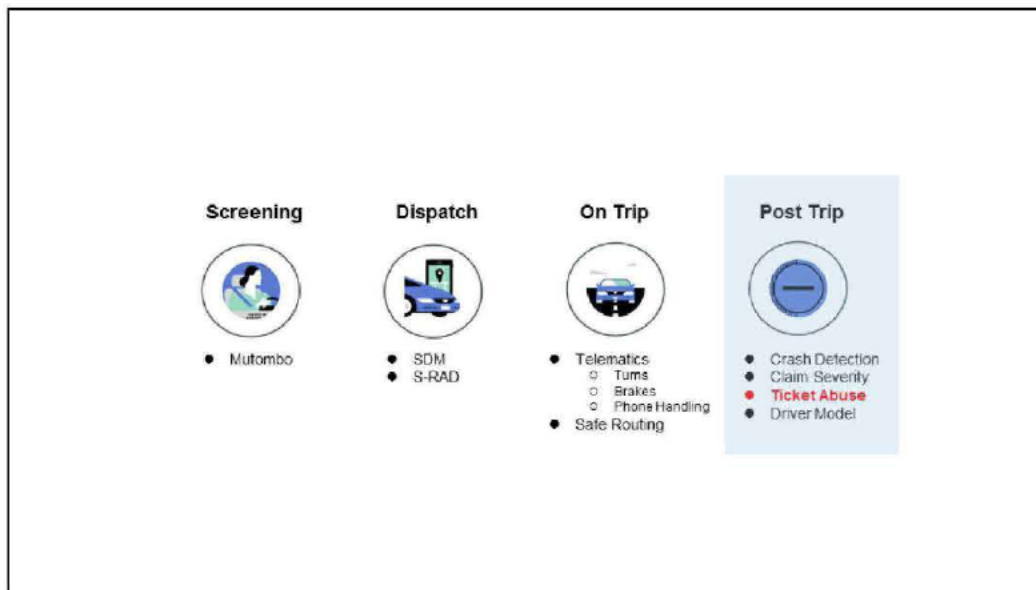








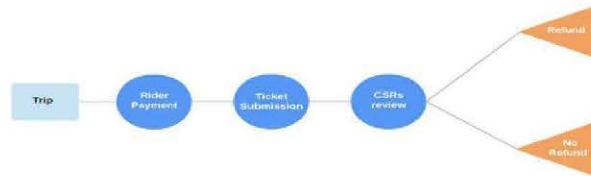






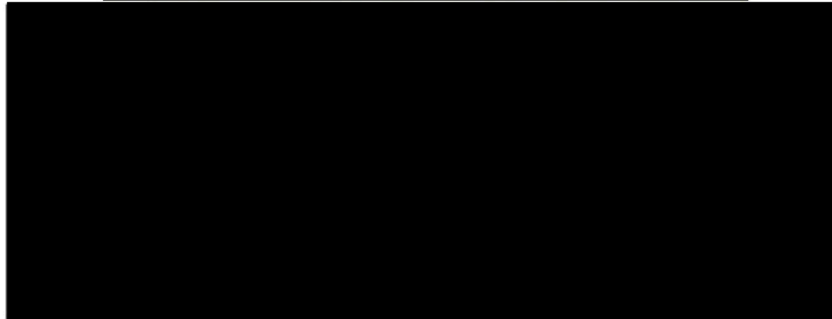
## Rider Support Abuse - Overview

We build a ML model to detect rider support abuse (at rider account level) in the purpose of asking for refunds, timely and comprehensively, using ticket contextual data, rider behavioural data, and text.



### **Rider Support Abuse - Model Performance**

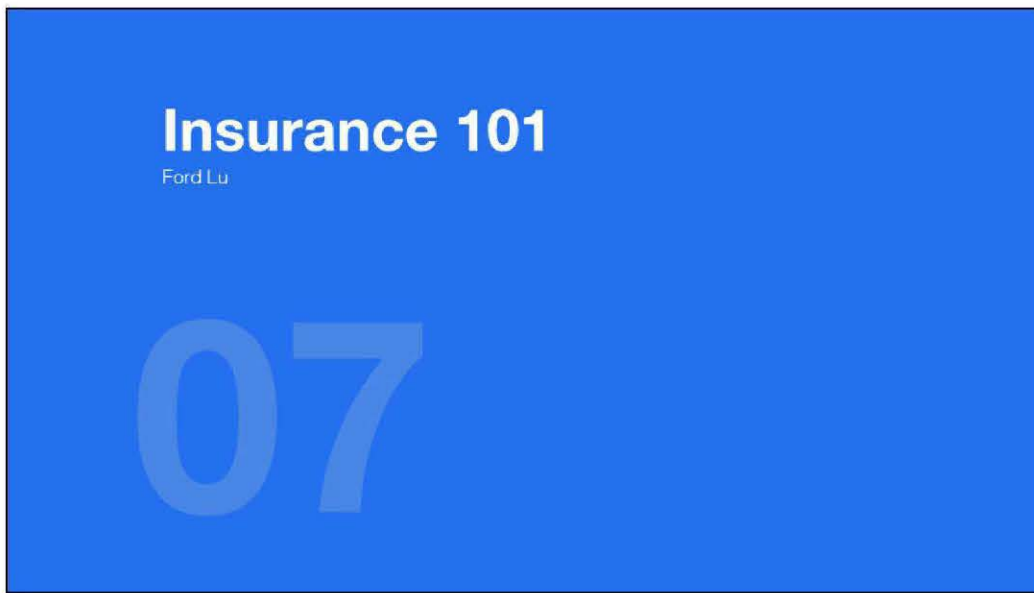
- On average, [REDACTED]
- Annually, if we use the model results and keep the same trigger rate of the current policy, [REDACTED]



## Process & Tools

- Data Science Workbench (DSW)
- Beeline (Hive)
- Query Builder
- Phabricator → Jira
- Coding
  - Scala
  - Python
  - R

**Questions?**



Today's Topics

- 01** Introduction
- 02** Insurance Coverages
- 03** Insurance Costs
- 04** Risk Retention

## Introduction

**Insurance involves MANY teams!**





US, Auto are the main driver of global insurance costs

2021 Est. Cost By Line of Coverage		
Line of Business	2021 Budget	Distribution

- \* Others include corporate insurance coverage, such as Cyber, Property, EPL, E&O, Aviation, Employed Lawyers, Crime, Fiduciary, Geico, Earthquake.

\_\_\_\_\_

\_\_\_\_\_



## Casualty Overview

INTRO | CASUALTY OVERVIEW



**Auto**

- Owned / leased Autos
- Non-owned autos (platform users)



**General Liability**

- Premises liability
- Product liability
- Physical assault / sexual misconduct
- Non-owned bicycles (couriers)



**Workers Comp / EL**

- Traditional employees
- IC / Classification complaints
- On-the-job injury coverage for delivery partners



**Directors & Officers**

- Personal assets of D&Os
- Company assets

See the 2020-2021 Slide Casualty Packet [here](#)

Auto Liability

# AUTO & GL | **COVERAGE**

Insurance is foundational to the rideshare / TNC model

Transforming auto insurance from a fixed annual cost to a variable cost that is embedded in the economics of each trip has been the key to unlocking the part-time and flexible ridesharing model

Drivers don't need to purchase an expensive taxi policy to take their first ride

Blanket coverage enables consistent coverage and claims experience for all rides and huge reduction in administration and compliance costs

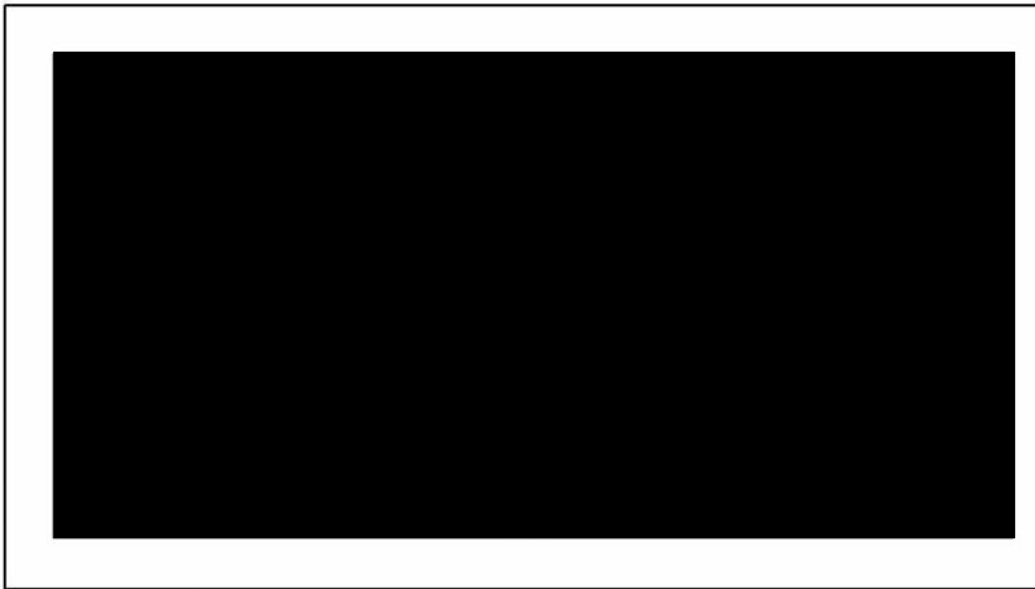
Rideshare insurance was new to insurers and difficult to place but much easier now with many carrier options



AUTO & GL | **COVERAGE**

Livery	Rideshare / P2P / Eats
Generally full-time	Generally part-time, seasonal
Commercially licensed	No additional licensing required
Major Markets: Mexico, Europe, New York, Egypt	Major Markets: US, Brazil, Australia, Canada
Example: California Livery Insurance Costs	Example: California Rideshare Insurance Costs
Driver's annual insurance cost: \$6,000	Driver's annual insurance cost: [REDACTED]
Uber purchased auto coverage: \$0.10 per on trip mile (Excess only)	Uber purchased auto coverage: [REDACTED] per on trip mile
	

Revised 01/1/2020



[REDACTED]

[REDACTED]



# AUTO & GL | COVERAGE

## Uber US P2P Insurance Coverage by Usage Period

### Auto insurance for rideshare drivers with Uber



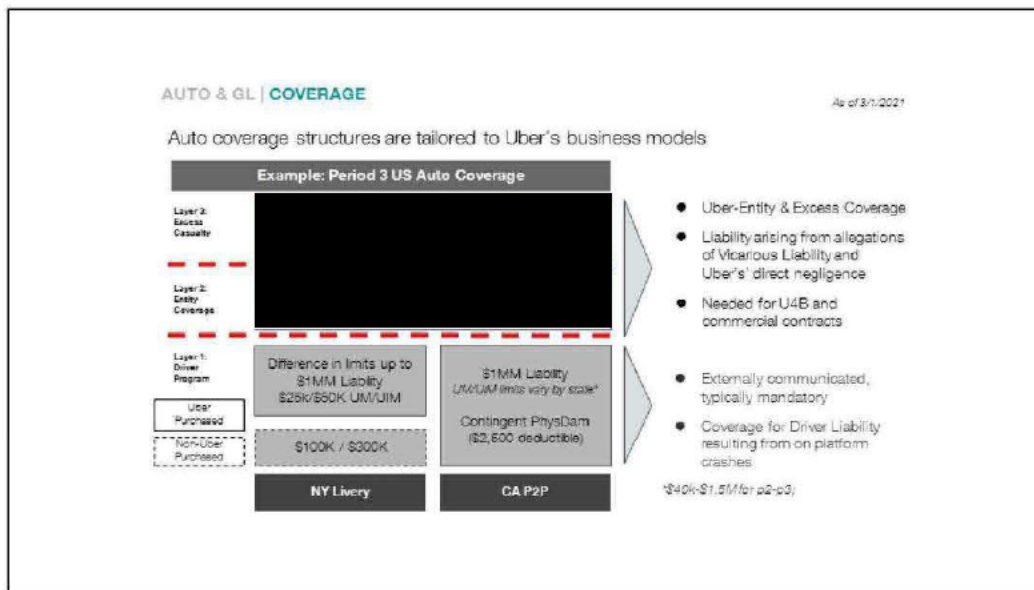
\*Nonowner/uninsured liability coverage on your behalf if you're not licensed as a driver at the time of the accident.

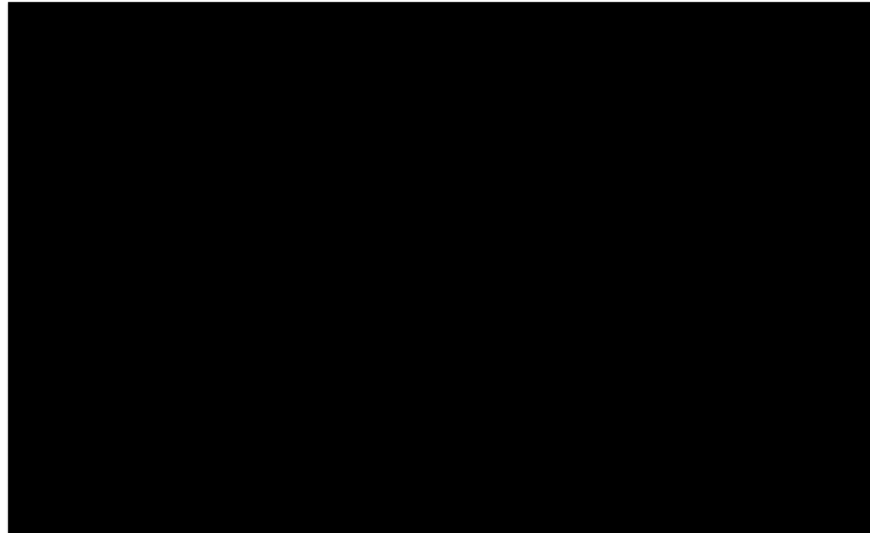
\*\*Nonowner/uninsured motorist bodily injury coverage on your behalf.

\*\*\*May be covered damage to your vehicle as long as you have comprehensive insurance that includes comprehensive and collision coverage for that vehicle to cover you when you're not on the Uber app.

Note: Additional coverage will be provided when requested by time and not any. At least this much coverage is provided in all situations for drivers who have completed all applicable steps. Third-party factors (such as liability) could be for Uber app.

<https://www.uber.com/us/insurance>










US P2P mileage breakdown is prospective, based on expected 3/1/2021 renewal state mix (F1 2021 forecast version)

General Liability

GENERAL LIABILITY | **COVERAGE**

In addition to typical General Liability exposure, Uber also faces GL exposure to Physical Assault and Sexual Misconduct Liability.

Physical Assault	Sexual Misconduct Liability (SML)
	



Mention: Product liability used to be included as well with JUMP

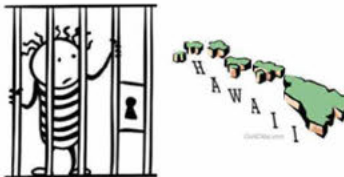


Risk Retention

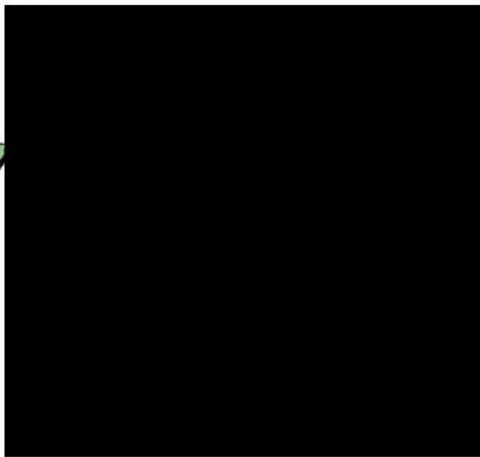




Risk Retention | Aleka Insurance



- Aleka is a captive domiciled in Hawaii
- Wholly owned subsidiary of Uber
- Reinsures insurance carriers
- Allows Uber to lower insurance costs ->  
**Path to Profitability \$\$\$**



Give an example of quota share reinsurance for CA P2P and example of excess of loss reinsurance

END

## Why we experiment: The Philosophy

### Data Driven Decisions



Enable Uber to move fast and distribute decision making by ensuring that every change is measured, monitored, and analyzed.

### Scientific Method



Experiments must contain a clear hypothesis pointing to specific metrics, to avoid drawing opportunistic conclusions.

### Shared Learning



Experimenters should be data-informed not necessarily data-driven, and understand the shortcomings of any experimentation platform.

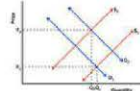
## Where we experiment: Challenges

## Mobile



Multiple apps and platforms create challenges with consistency.

## Marketplaces



Hundreds of N-Sided Marketplaces agents moving in real-time creating strong Interaction Effects.

## Backends

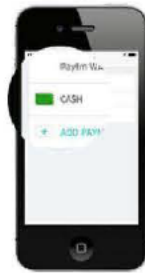


Experimenting across thousands of microservices, and thousands of features, requires performance and robustness.

## Experimentation at Uber

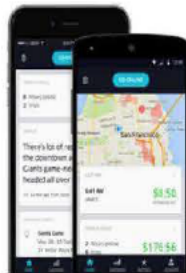
### RIDERS

Cash Payments



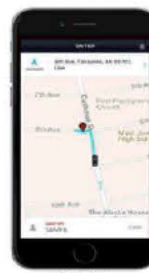
### DRIVERS

Driver App Re-design



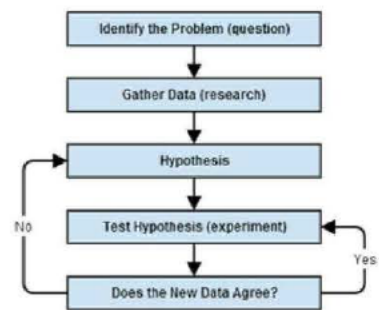
### MARKETPLACE

Dispatch Algorithms



Driving  
First Rider

What is Experimentation?



## Experiment Methodology Types

### Randomized Experiments

- Randomization over treatment and control
- **A/B Testing**
  - A/B testing, multivariate tests e.g. ANOVA
  - Control and treatment groups do not change during the experiment duration
  - A/B experiments are most powerful technique available
- **Switchback**
  - pseudo A/B where control and treatment are switched over time when there are network effects

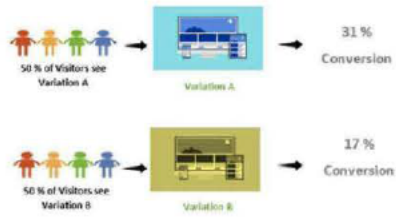
### Observational Studies

- Purely observational with no randomization
- **Difference in Differences (Diff in Diff)**
  - Pre-post analyses to measure lift
  - Useful to analyze cohorts (e.g. the completion of commuters)
  - Difficult to control external factors
- **Synthetic Controls**
  - Runs on entire market (e.g. SP)
  - Find similar market to the treatment market as controls (i.e. synthesize control markets)
  - Less powerful than A/B
- **Surveys**
  - Send out pre and post survey to measure safety sentiment and product awareness

### A/B Testing: An Example

#### Simple A/B example:

- Website optimization: split traffic into two groups (control and treatment) in a randomized way.
- Measure the difference in conversion between variation A and B to understand impact of changes





## A/B Testing: First Recorded Clinical Trial in History

### Introduction:

- Scurvy was an epidemic resulting in lack of vitamin C in 18th century
- In 1740, close to 1,300 sailors died of scurvy aboard [Cape Horn's voyage](#)
- James Lind was a Royal Navy surgeon who studied treatments for scurvy on board the Salisbury at sea in 1747

### Lind's hypothesis

- Scurvy could be cured by acids, include dietary supplements of acids

### Lind's approach:

- divide 12 sailors into six groups of two, give everyone same diet, but supplement with one of the following:
- group 1: cider, 2: vitriol, 3: vinegar, 4: seawater, and 5: oranges and lemon, 6: barley water

### Results:

- group 5 recovered within 4 week



James Lind  
Circa 1716- 94

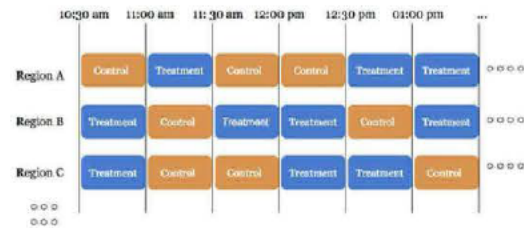
## Switchbacks: Dealing with Network Effects

How to test pricing changes in a live city?



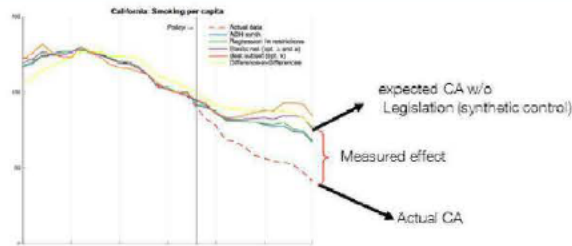
### Switchbacks: Marketplace Experiments

- Control and treatment get switched over time to mitigate network effect
- **Example:** surge pricing experimentation - treatment units varies with time; no riders / drivers are disproportionately impacted
- **Analysis:** control and treatment units are aggregated at time-region units level and average values are compared
- **Fun fact:** first applied in agriculture in [cow location experiment](#)



### Synthetic Controls: Creating Control in Experiments

- **Synthetic Control Method:** Create or synthesize control in experiments, where everyone gets treatment in targeted region
- Example: anti-smoking ban legislation enacted in California in 1989 as part of Prop. 99
- Can't do an A/B test since entire state of California is treatment
- In famous [study](#), the authors created 'synthetic' California which would exist if the legislation did not pass (aka synthetic control)
- an example synthetic California could be made of 50% Nevada, 30% Arizona, 15% New York and 5% Connecticut



### Experiment Design: The Process

- 1 Develop hypothesis and choose success metric(s)
- 2 Determine amount of desired lift in target success metrics
- 3 Calculate required sample size (power analysis)
- 4 Split data into two groups and expose treatment to one of the groups until you reach the required sample size
- 5 Analyze results

## Experiment Design: Metrics

- 1. Success Metrics:** Typically the primary metric that will determine whether the new product or policy is successful which will directly impact rollout decisions.  
Example: Rider on Driver Serious Interpersonal Conflict (IPC) rate on updated Safe Dispatch Model (SDM)
- 2. Guardrail Metrics:** Metrics and thresholds that indicate when additional monitoring is needed and possibly when the experiment needs to be stopped. Typically marketplace metrics (trip completion rate, cancellation rate, etc.)  
Example: If the cancellation rate of a new product being experimented is greater than 10%, we will roll back the experiment.

Experiment Design: Sample size (Power Analysis)

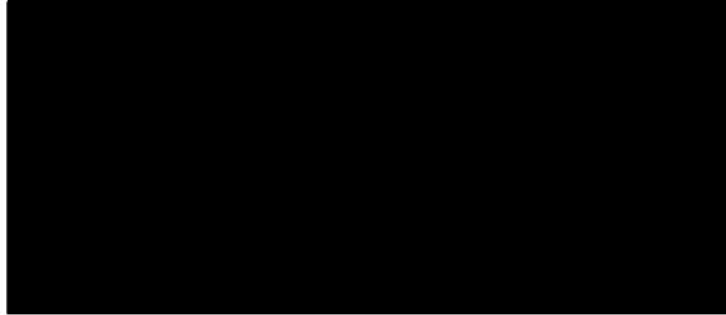
- Provides time (approx.) needed to complete the experiment based on the effect size we want to measure with **statistical significance**
- Power controls the type-I error
- Sample size and power are related: more sample size means more power
- Need to calculate sample size before the experiment start

		Reality	
		Positive	Negative
Study Finding	Positive	True Positive (Power) (1- $\beta$ )	False Positive (Type I Error) ( $\alpha$ )
	Negative	False Negative (Type II Error) ( $\beta$ )	True Negative

Relationship with Sample Size	
Effect Size / Minimum Detectable Effect Size	Inverse: smaller the effect size, the larger the required sample size
Significance Threshold	Inverse: the lower the threshold, the larger the required sample size
Power / Sensitivity	Direct: larger the Power, the higher the required sample size

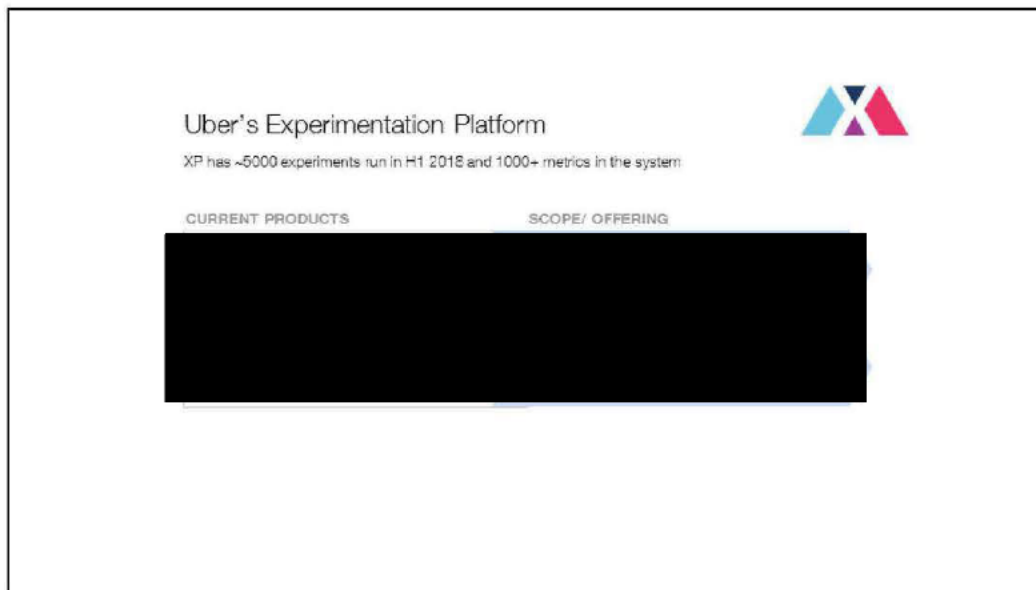
### Surveys

- Send out surveys to measure safety sentiments- "Uber is committed to Safety" and product awareness
- Typically sent twice, **before** and **after** the experiment is conducted
- Measure the difference in sentiment pre and post experiment / product rollout.

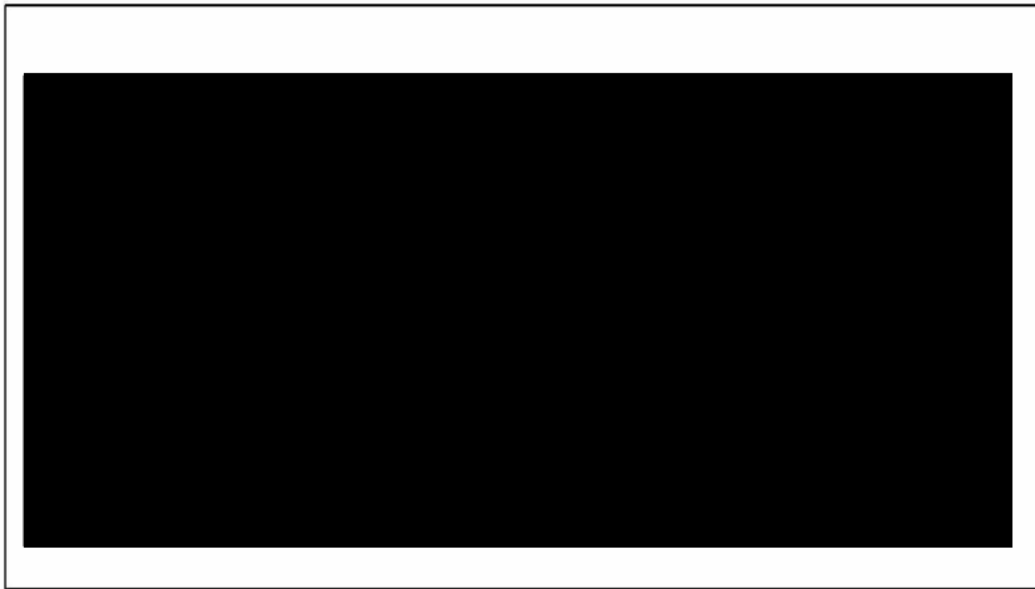




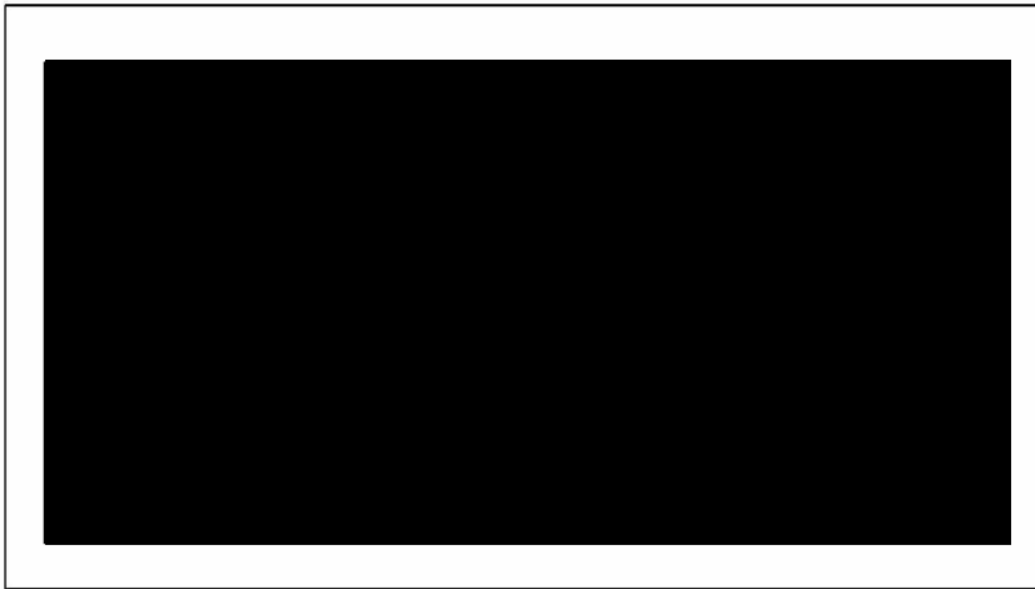
## Experimentation Tools



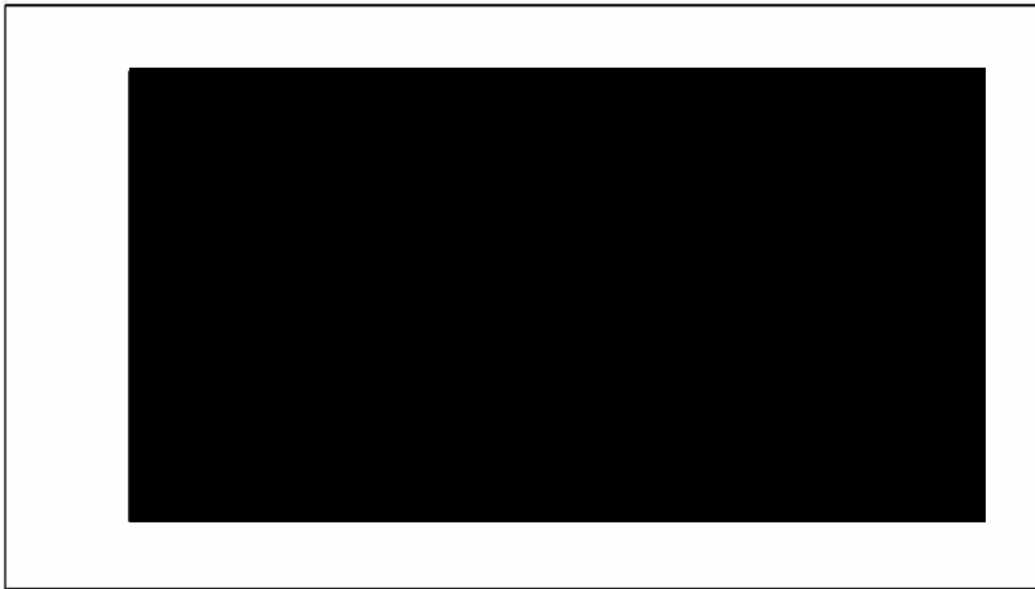








## **Example experiments**



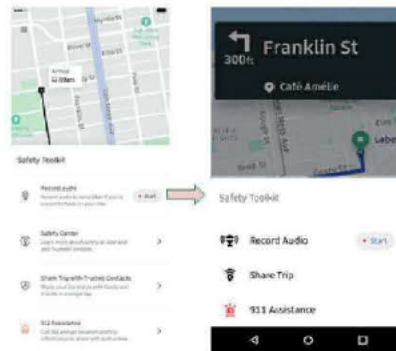




## **On Trip Audio Recording**

## Audio Recording User Experience

- Available to both riders and drivers
- Encrypted and stored on the device
- Rider or driver cannot listen to recording
- User has no access until users send it to us



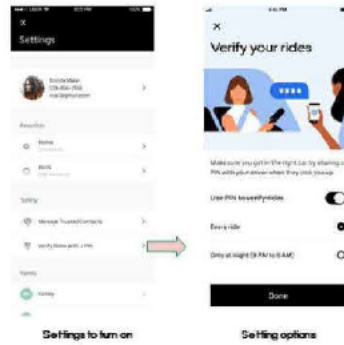




**Verify Your Ride**

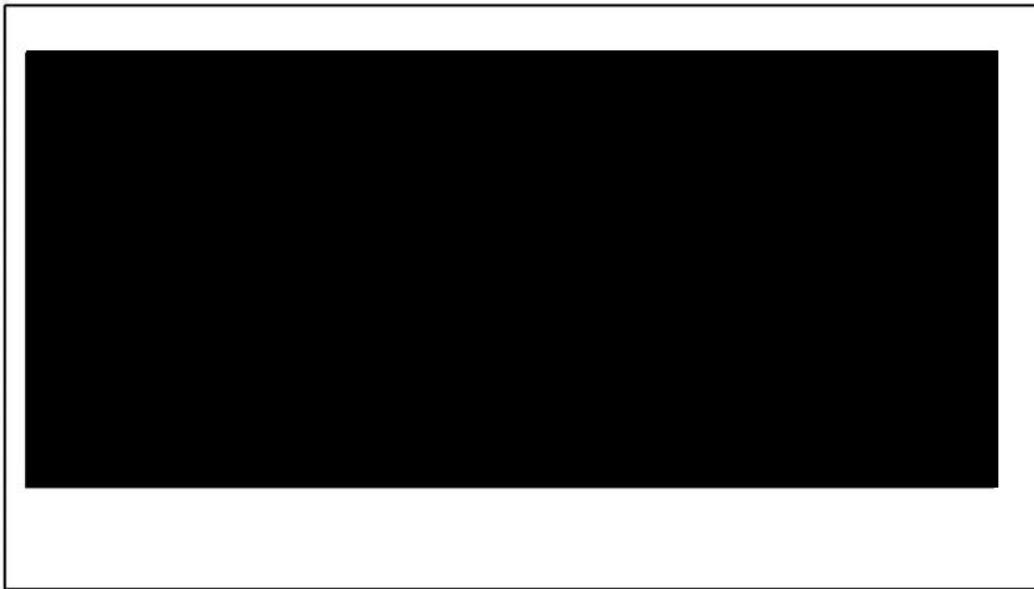
## PIN User Experience

- **Turn on in settings**
  - Users can set up this feature from the safety section of their settings.
- **Unique PIN on every trip**
  - A unique PIN will appear on the driver match card for every trip that Verify Your Ride is turned on for.









## How to get help



- Engdoc [REDACTED]
- Wiki pages [REDACTED]
- Internal Stackoverflow [REDACTED]
- Slack channel for [REDACTED]
- Email: [eng@uber.com](mailto:eng@uber.com)
- blog post:
  - <https://eng.uber.com/x/>
  - <https://eng.uber.com/experimentation-platform/>
  - <https://eng.uber.com/x-background-push/>
  - <https://eng.uber.com/autonomous-rolouts-regression-analysis/>

## UBER\_JCCP\_MDL\_000475307

## Metadata

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Account	tbreeden@uber.com	SEMANTIC
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Attachment Names	ppt	SEMANTIC
Begin Family	UBER_JCCP_MDL_000475307	SEMANTIC
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Other Custodians	Breeden, Tracey;Fuldner, Gus;Kaiser, Roger;Kawada Page, Jodi;McDonald, Katy;Parker, Kate;Silver, Nick;Chang, Frank;Kansal, Sachin;Luu, Jenny;Shuping, Valerie	SEMANTIC
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